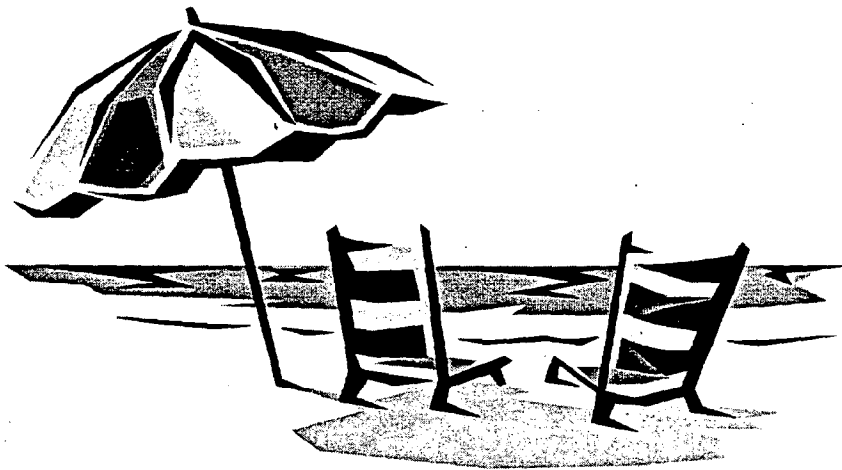


# South Carolina's Annual State of the Beaches Report April 1998



SC Department of Health and Environmental Control  
Office of Ocean and Coastal Resource Management

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459.4  
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1998

DHEC-OCRM

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This report was prepared by the staff of the South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management. Funding for beach monitoring was provided by a grant from the U.S. Geological Survey. For additional information or copies of this report, contact Bill Eiser, staff oceanographer.

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## **Introduction**

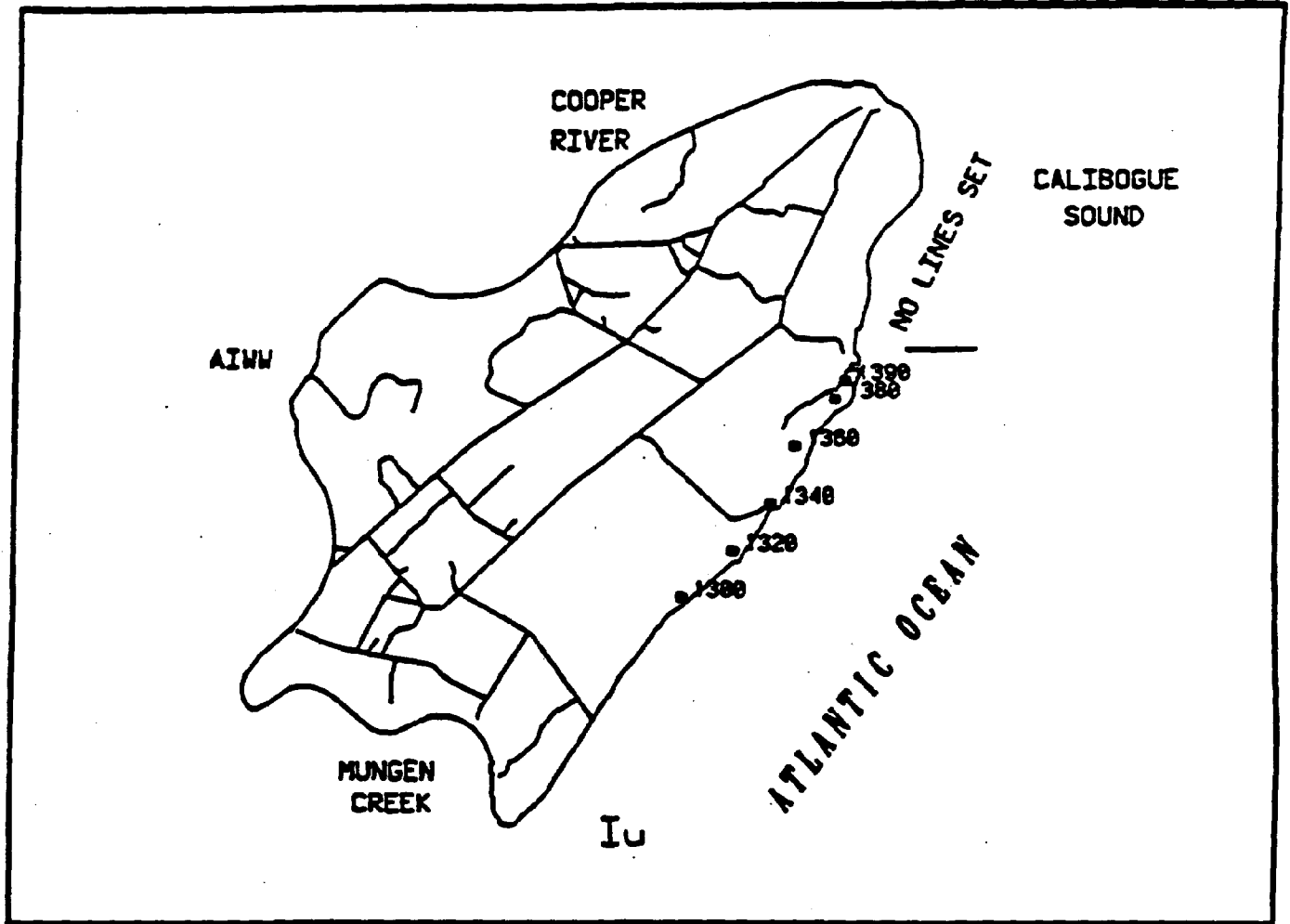
The following report summarizes changes to South Carolina's beaches within the past year. The results are based on beach profile surveys conducted in the spring and fall of 1997 at approximately 400 monitoring stations throughout the state. Surveys start at a benchmark located landward of the primary dune or seawall, and continue down the beach face to a depth 5 feet below mean sea level, or about waist deep at low tide. The actual elevation used for the surveys, and all elevations referenced in this report, is the National Geodetic Vertical Datum of 1929 (NGVD 29), which is approximately the same as mean sea level. The resulting profile shows a cross-section of the beach shape at the time of the survey. Multiple dates can be compared to determine what changes have occurred to the beach profile over time.

Profiles are analyzed for dune erosion or scarping, changes in beach slope, and changes in unit-width sand volume, the amount of sand from the dune to the -5 foot contour, per linear foot of shoreline. This sand volume is expressed as cubic yards per linear foot of beach. The presence or absence of a berm, the shelf of dry sand between the dune and the high-water mark, is noted, as well as any sand bars and corresponding troughs, which are commonly referred to as ridge and runnel systems. Berm width is particularly important, since it represents the amount of recreational dry-sand beach available at high tide. Most beaches in South Carolina go through a yearly cycle of profile change. In the summer, smaller waves tend to push sand up the beach, forming a wider berm and a steeper beach slope below mean high water. In the winter, higher energy waves erode sand from the berm and move it to an offshore bar, resulting in a narrower high-tide beach and a more gently sloping beach below mean high water. In many cases this seasonal profile variation is greater in magnitude than the long-term trend for a particular island or beach—that is, the change observed from October to April and then from April back to October can be greater than the change observed for subsequent Octobers or consecutive Aprils.

As called for under the Beachfront Management Act, all beaches in the state have been classified as standard zones or inlet zones. Inlet zones are regions in close proximity to a tidal inlet, where the presence of the inlet plays a dominant role in erosion or accretion patterns on the beach. Most inlet zones are unstabilized, meaning the inlet channel is not anchored by jetties or groins, and the surrounding shoreline is often quite dynamic. On the location maps that appear in this report, standard zones are designated as "S", unstabilized inlet zones as "Iu", and stabilized inlet zones as "Is". In general, the sea islands in the Charleston and Beaufort area consist of a standard zone in the central portion of the island, and an inlet zone at either end. In the Grand Strand, the shoreline is a continuous standard zone, interrupted by small inlet zones at the swashes.

1997 was a fairly mild year for the beaches of South Carolina, primarily due to the uneventful hurricane season. Unlike 1996, when four storms passed close enough to South Carolina to cause beach erosion, no hurricane or tropical storm affected the coast in 1997. The greatest changes to the state's beaches were man-made, as major renourishment projects were constructed in North Myrtle Beach, Myrtle Beach, and Hilton Head Island.

The remainder of this report contains individual summaries for each island or beach in the state surveyed during the past year. Summaries are presented in a south-to-north progression, from Daufuskie Island to Wailes Island. The geographic setting of each beach is discussed, along with any significant long-term trends. A typical beach profile plot is provided, with a location map showing survey monument locations. Finally, a state-wide summary is found at the end of the report.



Daufuskie Island

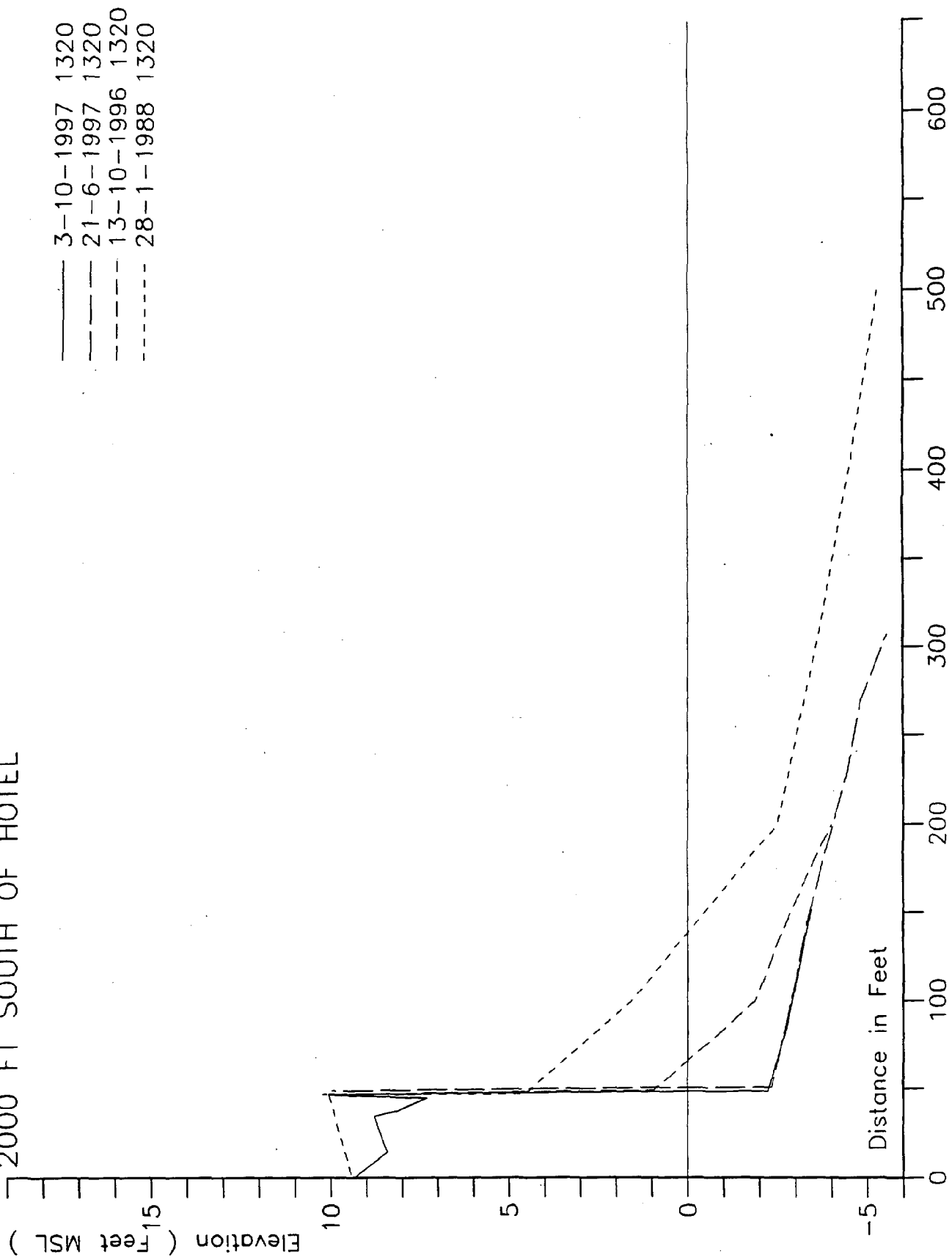
## ***Daufuskie Island***

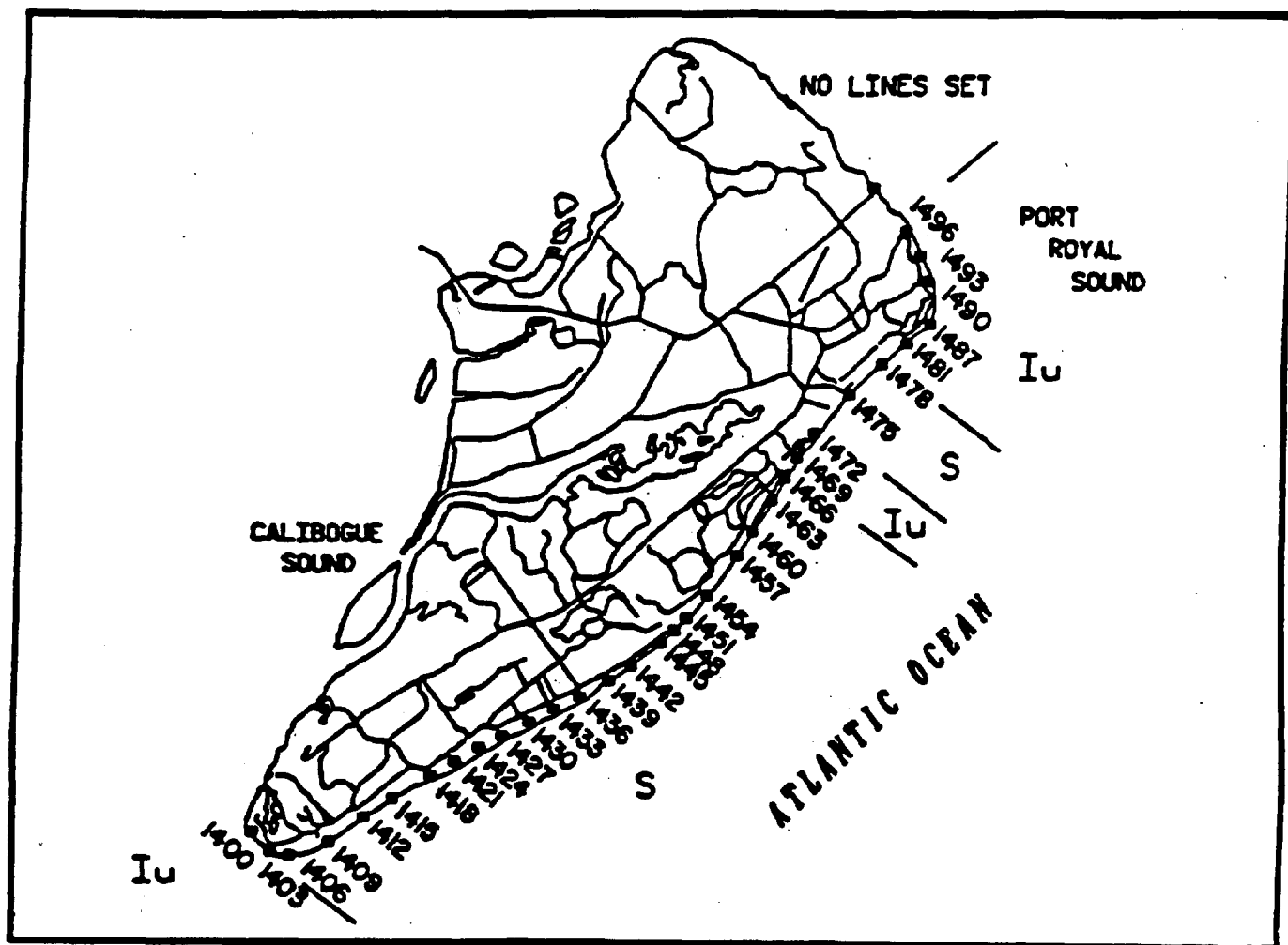
Daufuskie Island is located to the south of Hilton Head Island, between Calibogue Sound to the northeast and Mungen Creek to the southwest. The entire island has been classified as an unstabilized inlet zone. Long-term erosion rates on the island average -4 to -5 feet per year, with the highest rates of -10 to -11 feet per year found at the southern end of the Melrose Tract and the northern end of the Oakridge Tract.

Beach surveys on Daufuskie Island date back to January 1988 at some stations. Most recent data was collected in June and October 1997. During the past year, most stations south of the bulkhead in the Bloody Point tract continued to experience a moderate loss of sand from the intertidal beach profile, but uncharacteristically most also showed little or no upper beach scarp line erosion. Using the +5 foot contour as a measure of scarp line position, station 1210 accreted by 17 feet, station 1220 eroded back 16 feet, station 1230 accreted by 10 feet, station 1240 accreted by 9 feet, and station 1250 accreted by 43 feet. In the Oakridge tract, closer to the bulkhead, station 1260 eroded back 31 feet, and station 1300 accreted by 18 feet.

Along the Melrose bulkhead at station 1320 the beach dropped 3 feet, exposing 12 feet of the bulkhead from the crest at +10 feet to the toe at -2 feet. Station 1340 showed little change at the base of the wall. North of the bulkhead, station 1360 also showed only minor fluctuations during the past year. Prior to 1997, station 1380 had not been surveyed since May 1995. In the two and a half years since, the upper beach scarped back by 30 feet. Station 1390 had also not been surveyed since May 1995, but in this case the upper beach erosion was not as extreme, only 10 feet, and the intertidal beach profile was quite stable.

# 1320 Daufuskie Island 2000 FT SOUTH OF HOTEL





Hilton Head Island



## ***Hilton Head Island***

Hilton Head Island, located between Calibogue Sound to the southwest and Port Royal Sound to the northeast, is one of the state's largest barrier islands. Hilton Head Island can be divided into five geomorphologic reaches, which are each discussed below. A beach renourishment project placed 2.5 million cubic yards of sand on the Hilton Head shoreline between May and November 1997. Beach survey data was collected in June and October.

The portion of Sea Pines Plantation bordering on Calibogue Sound is an unstabilized inlet zone, subject to the influence of the Sound and out of the renourishment project limits. The long-term shoreline change rate is 2 to 5 feet per year of accretion. SCCC monuments 1400-1409 are located here. During 1997, station 1400 was slightly accretional, reversing an erosional trend which had been continuing for several years. Station 1403 lost a small amount of sand from the upper beach, while station 1406 lost sand on the lower beach. Net volume changes were only a few cubic yards. Station 1409 was essentially unchanged.

The next zone on Hilton Head is a 10 mile-long standard zone which extends from station 1412 in Sea Pines Plantation to station 1469, just south of the Folly. This area includes South Forest Beach, North Forest Beach, and Palmetto Dunes. Both North Forest Beach and Palmetto Dunes were included in the renourishment project, which began at the Hilton Head Inn. Long-term shoreline change rates vary in this zone--they are accretional south of Coligny Circle and erosional north of Coligny Circle, with the rate of erosion increasing with distance from the Circle. Most stations in Sea Pines, monuments 1412 through 1424, showed moderate accretion. Station 1412 gained 9 cubic yards, mostly along the upper beach, while station 1415 was virtually unchanged. The profile at 1417 gained 19 cubic yards, while 1418 showed only a minor 3 cubic yard gain. Monument 1421 at Laughing Gull Drive was the only Sea Pines station to show significant erosion, losing 19 cubic yards of sand. Station 1424 gained 9 yards. Stations in South Forest Beach all experienced minor seasonal changes. The largest sand gain occurred at station 1436, where volume increased by 9 cubic yards.

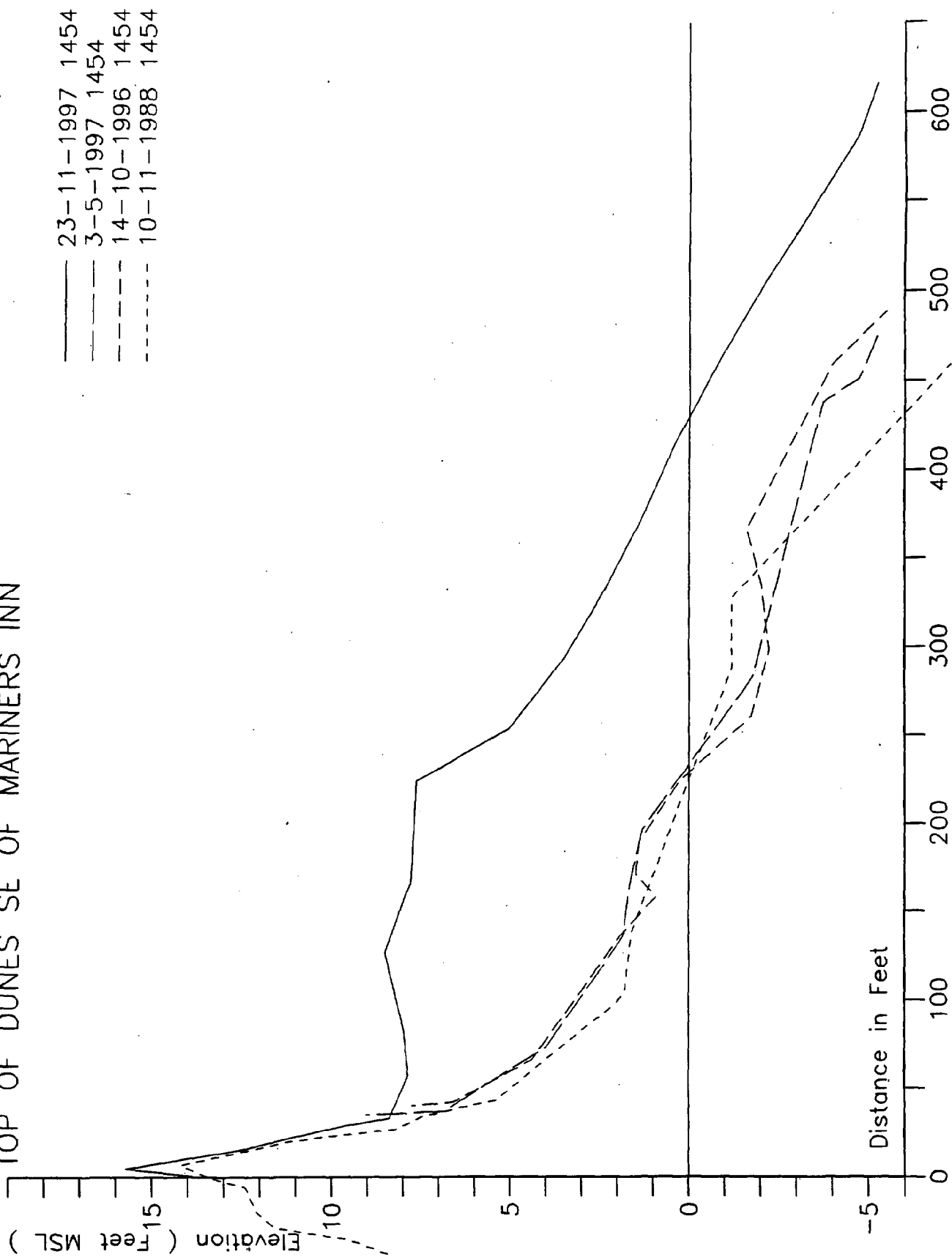
In North Forest Beach and Palmetto Dunes, long-term erosion rates are higher and unit-width sand volumes were lower prior to renourishment, but increased dramatically following renourishment in late summer and fall. From October 1996 to June 1997, prior to renourishment, this region experienced only moderate seasonal erosion during a fairly mild winter season. From June to October 1997, profile widths increased by an average of 200 feet as a result of the renourishment project. Data collected in the spring of 1998 and during subsequent surveys will document the fate of this renourishment sand.

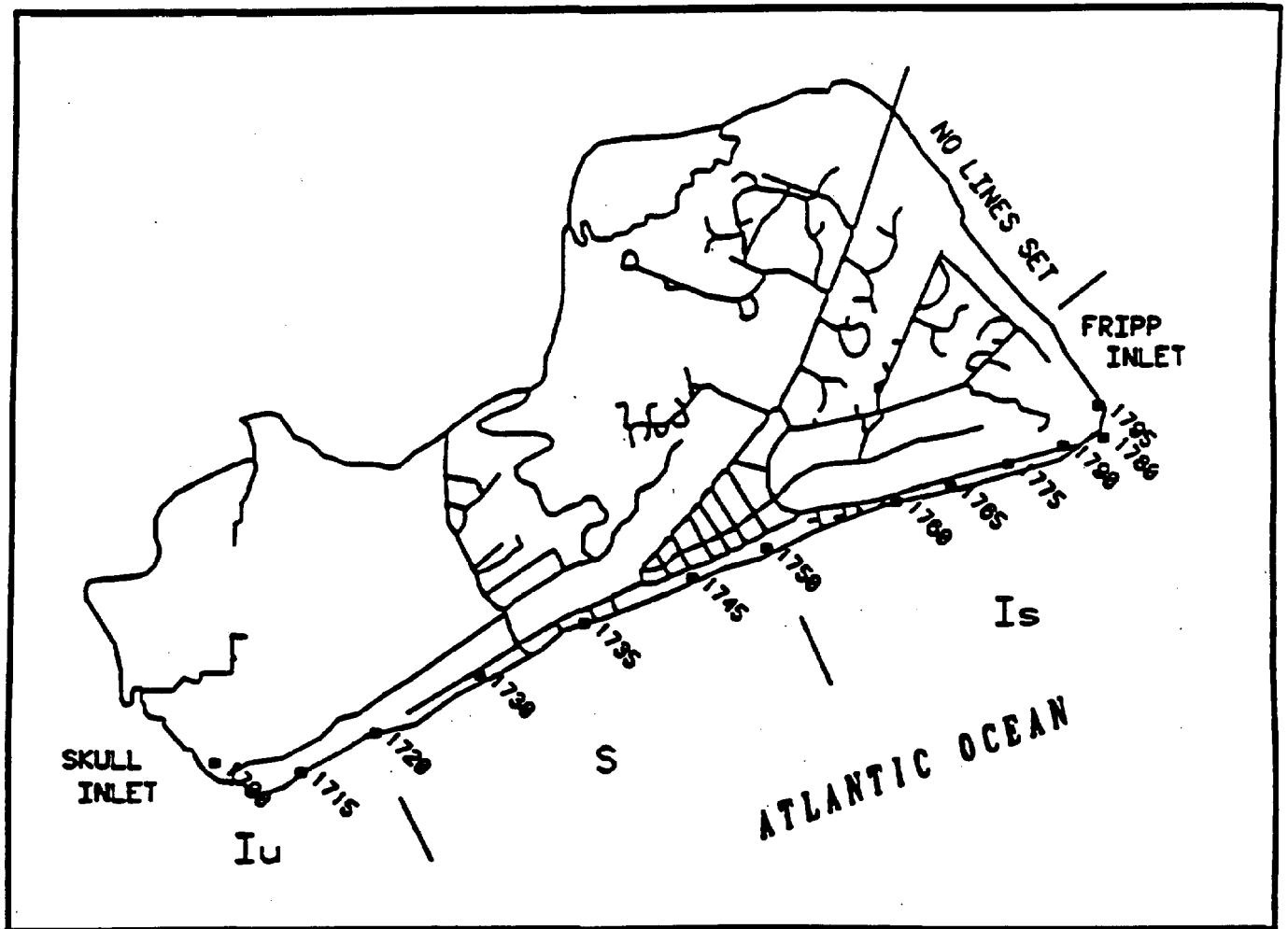
The third zone on Hilton Head is a 2200-foot long unstabilized inlet zone, located on either side of the Folly. Stations 1468, 1469 and 1472 are the monitoring stations in this reach, which historically can be very dynamic because of the inlet channel. While no renourishment sand was placed within several hundred feet of the Folly channel, the 1997 renourishment project shifted the beach profile 100 feet seaward on Singleton Beach, at stations 1468 and 1469. Station 1472 on the Burkes Beach side is close enough to the Folly that no renourishment sand was placed here, and the beach profile showed only moderate, natural changes.

The fourth zone is a 1.3 mile-long standard zone that extends from just north of Burke's Beach Road to the Westin Hotel and includes stations 1474 through 1478. All 4 stations here were renourished prior to the spring surveys, and show an average seaward shift of 130 feet from October 1996 to June 1997. It is interesting to note that the October 1997 surveys show virtually no loss of renourishment sand.

The fifth zone is an unstabilized inlet zone which includes all of the Port Royal Plantation shoreline. Survey stations 1481 through 1496 are located here. This region shows two distinct shoreline trends, with long-term accretion along the Atlantic shoreline to station 1484, and long-term erosion of nearly -6 feet per year along Port Royal Sound. Stations 1481 and 1884 were not included in the renourishment project but still show a gain of sand, as a continuation of the long-term trend. Stations 1487 and 1490, the first stations on the Port Royal Sound shoreline, gained 150 feet of beach width from renourishment. Station 1493 at Fort Walker Park was not renourished and lost over 50 feet of beach from October 1996 to June 1997.

# 1454 Hilton Head Island TOP OF DUNES SE OF MARINERS INN





Fripp Island

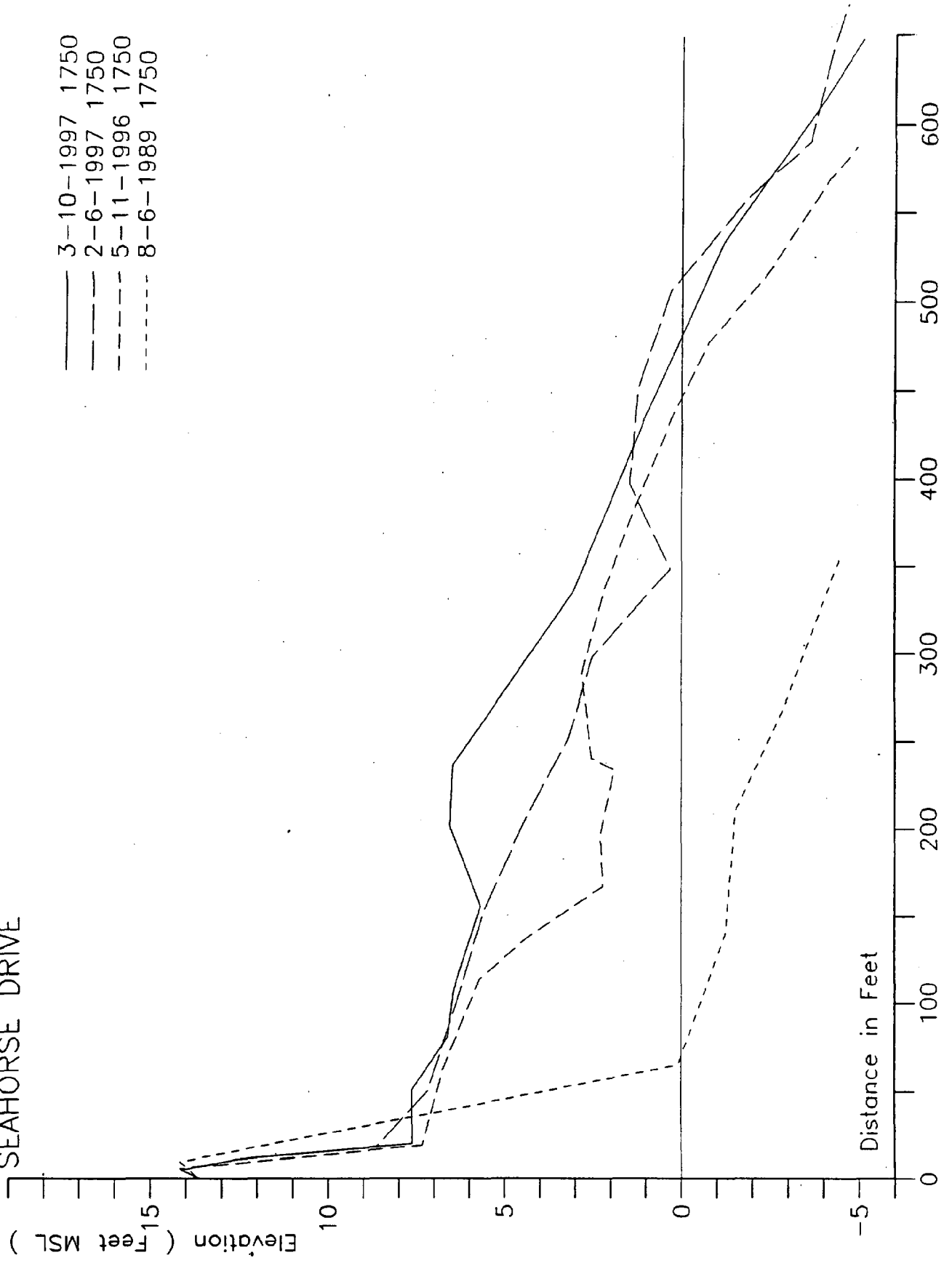
## ***Fripp Island***

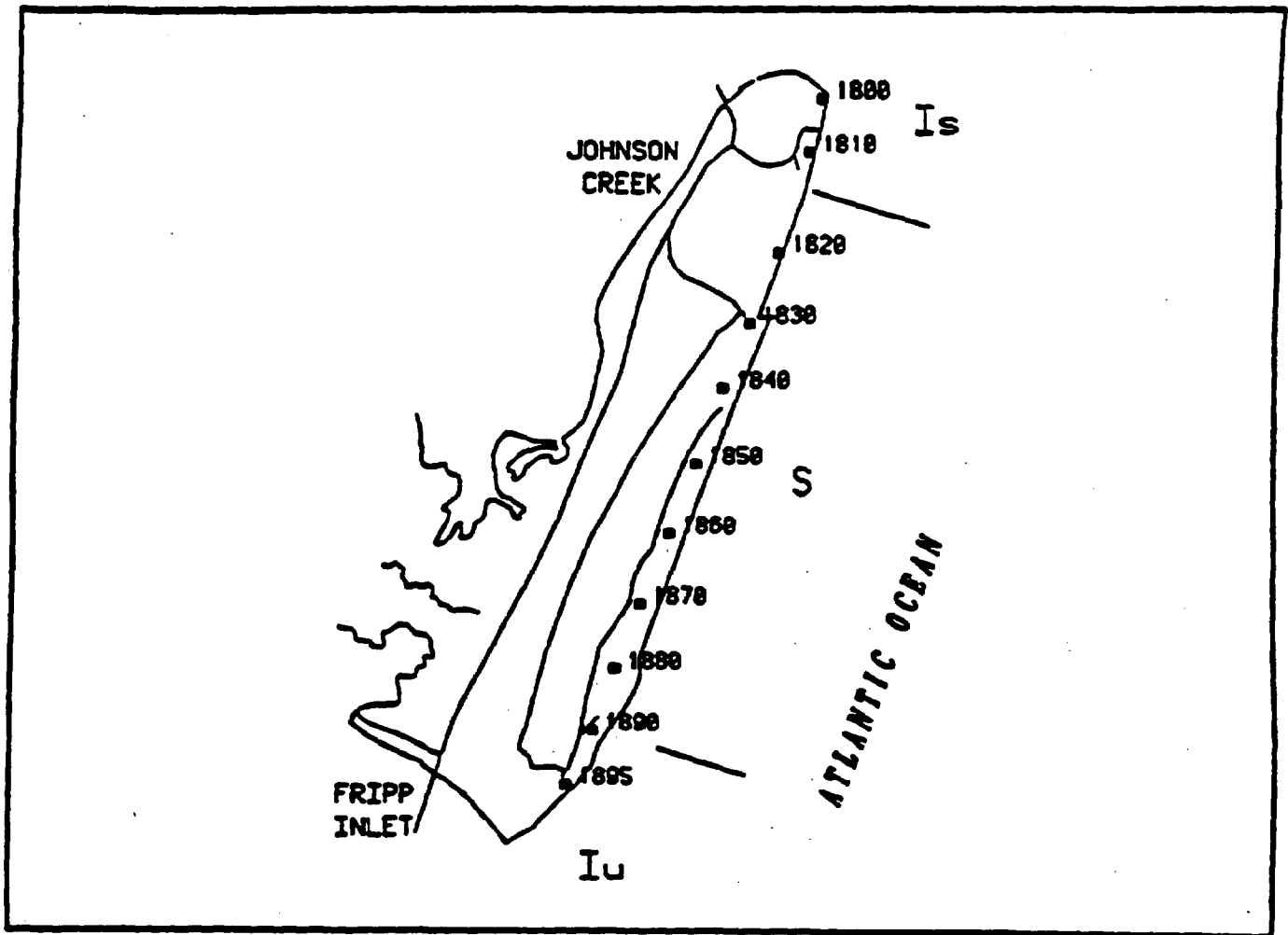
Fripp Island is a three mile long barrier island located between Pritchards Island and Skull Inlet to the southwest, and Hunting Island and Fripp Inlet to the northeast. Development on the island is primarily single family residential, and the island is almost continuously armored with revetments. The central portion of the island is classified as a standard zone, with an unstabilized inlet zone at the southwest end and a stabilized inlet zone at the northeast end. An analysis of long-term erosion trends has shown the island to be stable, although sand-bypassing events across Fripp Inlet, with a period of decades, can cause significant changes to the beach profiles on the island.

There are 15 beach survey monuments located on Fripp Island, some of them dating back to 1988. Profile data was collected in June and October 1997. Station 1700, on Skull Inlet, is sheltered from the open ocean and shows virtually no change from year to year. Stations 1715 and 1720, located at the southern end of the island, both showed a 2-3 ft. drop in beach elevation at the toe of the revetment from September 1996 to June 1997, but then a corresponding gain from June to October 1997, for virtually no net change. Stations 1730 and 1735 showed moderate sand gains at the base of the revetment, with an increase in unit-width sand volume of 7 cubic yards. There is still no dry-sand beach along this southern section of Fripp Island.

Sand volume gains increase towards the north. Station 1745 on Winter Trout Rd. gained 14 cubic yards, and station 1750 on Seahorse Drive gained 36 cubic yards, as portions of the upper beach increased in height by over 4 feet. The beach width seaward of the revetment begins to increase by several hundred feet here. At station 1755, near Drum St., the sand volume increase was a more modest 13 cubic yards per foot. Station 1760, at #763 Marlin Drive, actually lost 16 cubic yards of sand but still retains over 250 cubic yards seaward of the revetment. Station 1765, at #785 Marlin Drive, lost sand from the intertidal beach but gained an equivalent volume farther offshore. Station 1775, at the end of Marlin Drive, experienced the most dramatic change on the island, losing 95 cubic yards of sand along the entire profile. The last two stations fronting the Atlantic Ocean, 1780 and 1790, were fairly stable during 1997, while stations 1795 and 1798, on Fripp Inlet, are steep inlet profiles that showed only minor changes during the past year.

# 1750 Fripp Island SEAHORSE DRIVE





Hunting Island

## ***Hunting Island***

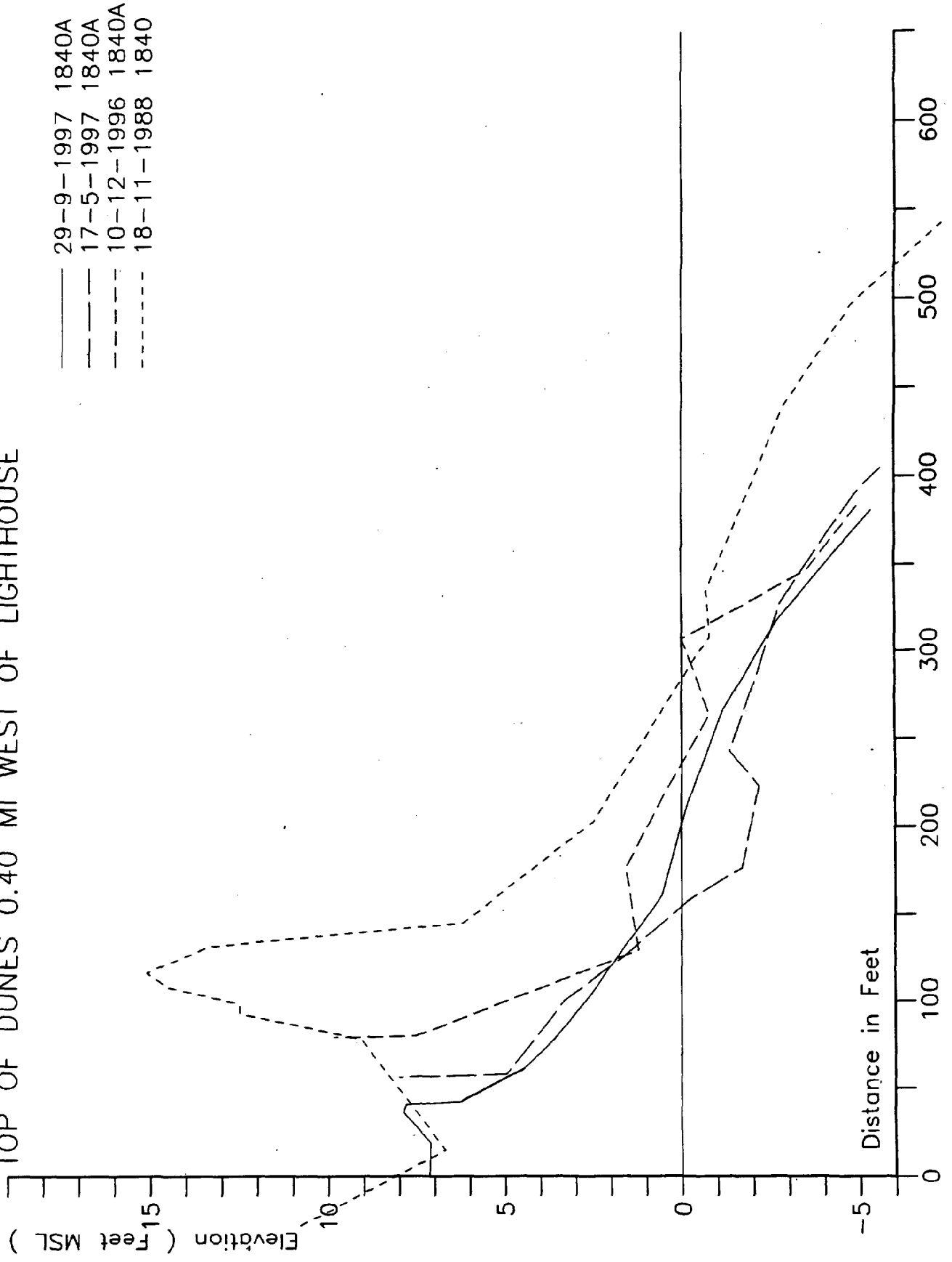
Hunting Island is a state park located between Fripp Island and Harbor Island. The island has historically been strongly erosional, with long-term rates ranging from -7 to -15 feet per year. The central portion of the island is a standard zone, while the southern end along Fripp Inlet is an unstabilized inlet zone and the northern end along St. Helena Sound is an inlet zone stabilized by an 800-foot terminal groin. Hunting Island has been renourished several times in the past 20 years, most recently in March 1991.

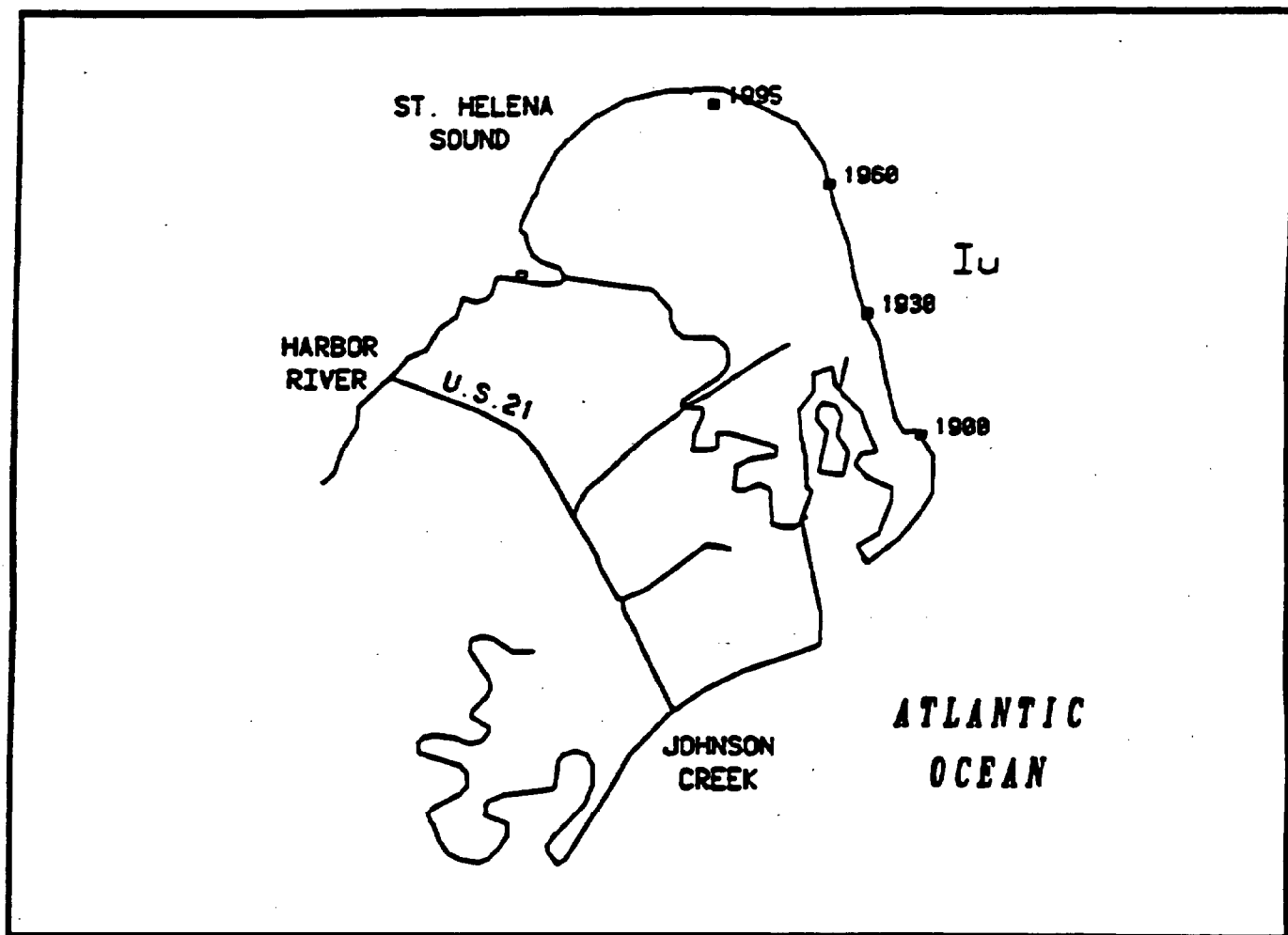
The 11 beach monitoring stations on Hunting Island are unique within the state in that the identification numbers increase from north to south. Surveys during 1997 were conducted in May and September. Station 1800, at the northern end of the island, is the most stable station on Hunting Island and was virtually unchanged during 1997. At station 1810 the primary dune remained stable and the active beach profile gained 6 cubic yards of sand. Station 1820 showed minor dune erosion and lost 5 cubic yards of sand from the profile.

The magnitude of beach erosion began to increase at station 1830, near the lighthouse, which showed increased dune erosion and a loss of 8 cubic yards of sand from the upper and intertidal beach. At station 1840, erosion cut the primary dune back by 42 feet and the profile lost 18 cubic yards of sand. Station 1860 experienced comparable dune erosion and sand volume loss. At 1870 the erosion began to lessen, as this station experienced 19 feet of dune scarping but a loss of only 7 cubic yards of sand from the profile. No survey data was collected at station 1880 during 1996, but from May 1997 to September 1997 the beach here was very stable. Prior to the September 1997 survey, the previous survey at station 1890 was collected in May 1996. In the year and a half between surveys the upper beach retreated by 75 feet, as a primary dune with a crest elevation of 13 feet was lost. At station 1895, the southernmost station on Hunting Island, the dune and upper beach were fairly stable during 1997 but the profile below mean low water lost a significant amount of sand from an offshore bar.



1840A Hunting Island  
TOP OF DUNES 0.40 MI WEST OF LIGHTHOUSE





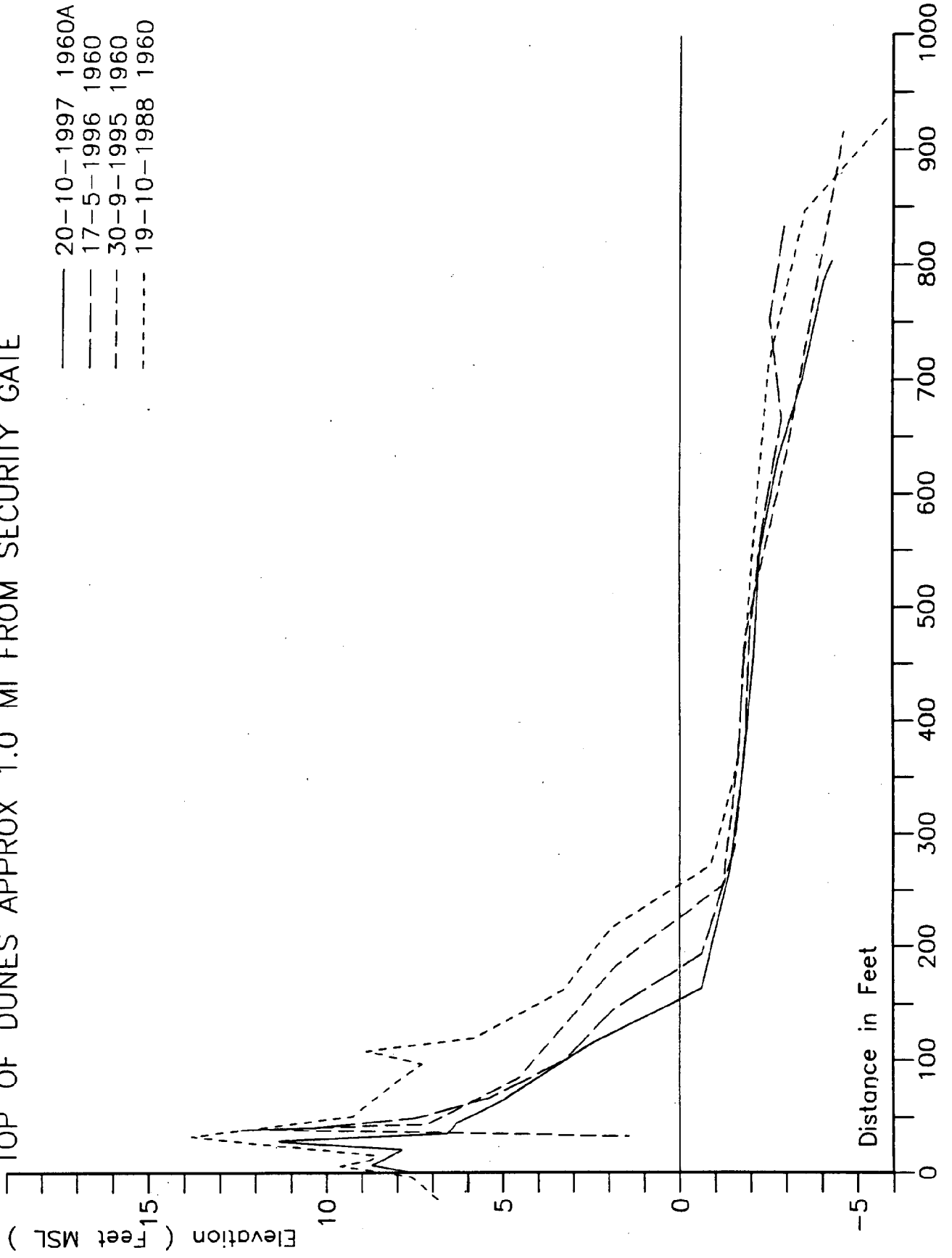
Harbor Island

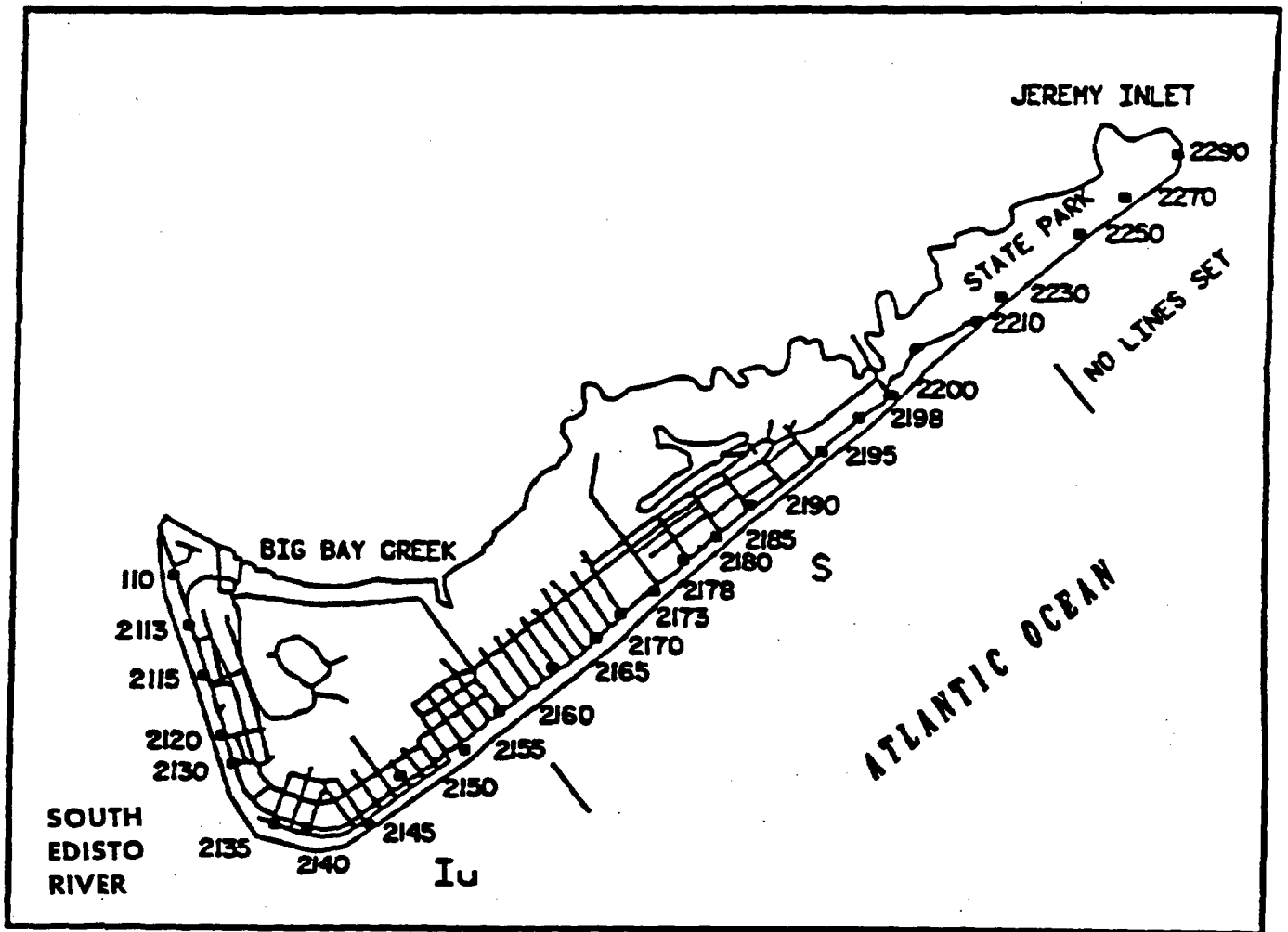
## ***Harbor Island***

Harbor Island is located between Hunting Island and Johnson Creek to the southwest and St. Helena Sound to the northeast. Beachfront development is primarily single-family residential, with a few condominium buildings. The entire island is classified as an unstabilized inlet zone, and while the shoreline is very dynamic it is generally accretional in the long term. The beach width decreases from south to north. There are a total of six beach monitoring stations on Harbor Island, four of which were installed in 1988, with the remaining two installed in June 1990. Most recent surveys were conducted here in June and October 1997.

Stations 1900 and 1930 are located at the southern end of the island, where the beach is wide and accretional. Station 1900 is located closest to Johnson Creek, and the beach profile here is extremely wide, over 2000 feet. A series of intertidal sand bars and troughs are constantly shifting back and forth in this area, changing the shape of the profile but having a minimal net effect on total sand volume. During 1997 a migrating sand bar merged onto the upper beach, increasing the berm height by 5 feet, while a second bar formed offshore. Unit-width sand volume increased from 337 to 383 cubic yards here. At station 1930, near the multi-family units, the sand volume dropped from 194 to 174 cubic yards due to lower beach erosion. At station 1960, on Harbor Island Drive North, erosion has been extreme in recent years but slowed in 1997. In the year and a half between the two most recent surveys, in May 1996 and October 1997, the dune scarped back 11 feet and the 0 foot contour moved 27 feet landward, for a volumetric loss of 11 cubic yards. The lower beach profile was essentially unchanged. Stations 1980 and 1995, where the shoreline begins to curve onto St. Helena Sound, showed minor changes but in general were fairly stable during the past year. Station 1998 is located within the lower wave energy environment of the Sound, so that the beach profile falls off fairly rapidly. The upper beach remained stable here, while the intertidal beach accreted some.

# 1960A Harbor Island TOP OF DUNES APPROX 1.0 MI FROM SECURITY GATE





Edisto Beach

## ***Edisto Beach***

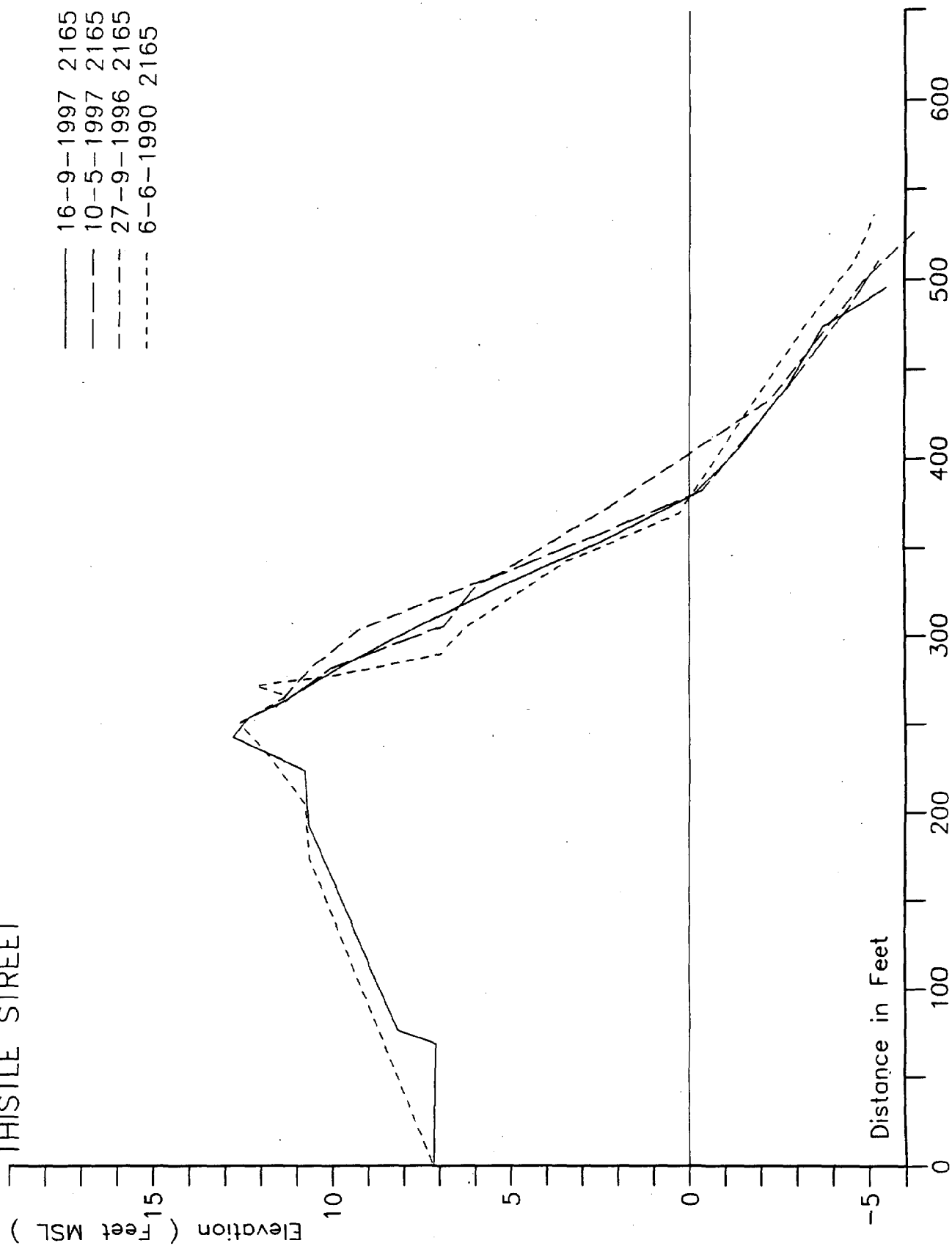
Edisto Beach is a barrier island situated between the South Edisto River and Jeremy Inlet. The northeastern portion of Edisto Beach is a state park, which includes camping sites, while the remainder of the island is primarily single-family residential. An extensive groin field on the island serves to stabilize the shoreline position. South of station 2160 (Marianne St.), the island is classified as an unstabilized inlet zone, with a long-term accretion rate of 3 feet per year. The rest of the island, including the state park, is a standard zone with a long-term accretion rate of 0.4 feet per year. There are 27 beach survey monuments on Edisto Beach, which were surveyed in May and September 1997.

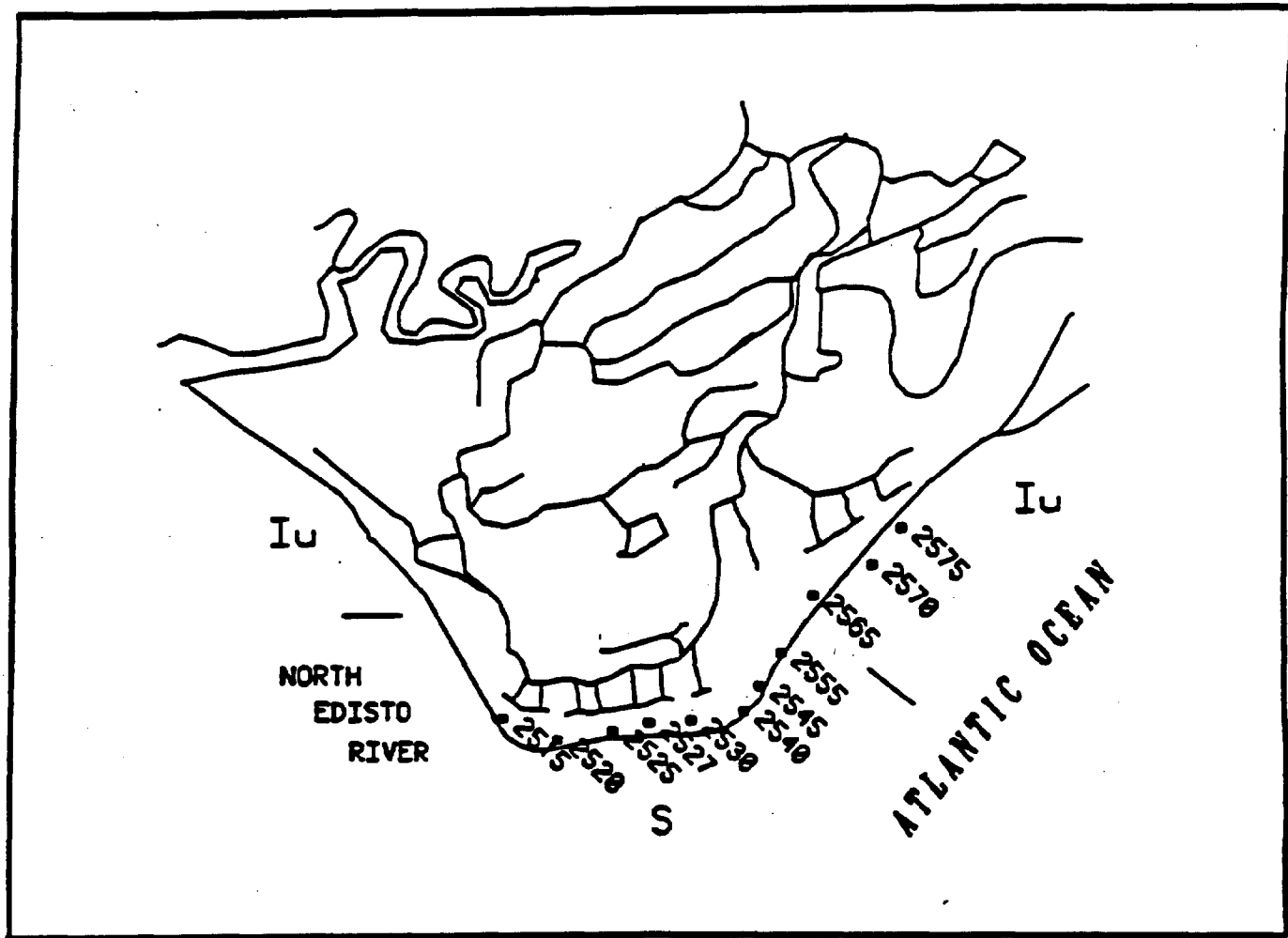
Stations 2110-2130 are located along the South Edisto Inlet shoreline. These stations are sheltered from the open ocean and during the past year experienced only modest seasonal changes on the intertidal beach. Stations 2135 at Edisto Street and 2140 at Billow Street are located on the shoreline curve between South Edisto River and the Atlantic Ocean, a section of beach that can be very dynamic. Station 2135 lost 17 cubic yards of sand last year, while at 2140 the dune eroded back 22 feet.

The oceanfront southern half of Edisto Beach, from stations 2145 to 2165, has the widest oceanfront beach on Edisto. Station 2145 on Laroche Street was the only profile to show any significant erosion, a loss of 9 cubic yards of sand over the entire profile. Most other stations here were fairly stable. The northern half of developed Edisto Beach, from station 2170 to station 2200 at the Pavilion, is the most critically eroded section of the island. It is here that houses encroach farthest onto the beach. During the past year, the beach at most stations experienced only minor dune erosion and a moderate loss of sand over the entire profile.

Stations 2200 and 2230 are located in the state park at the northeast end of the beach. These two stations also experienced dune erosion and sand volume loss during 1997.

2165 Edisto Island  
THISTLE STREET





Seabrook Island



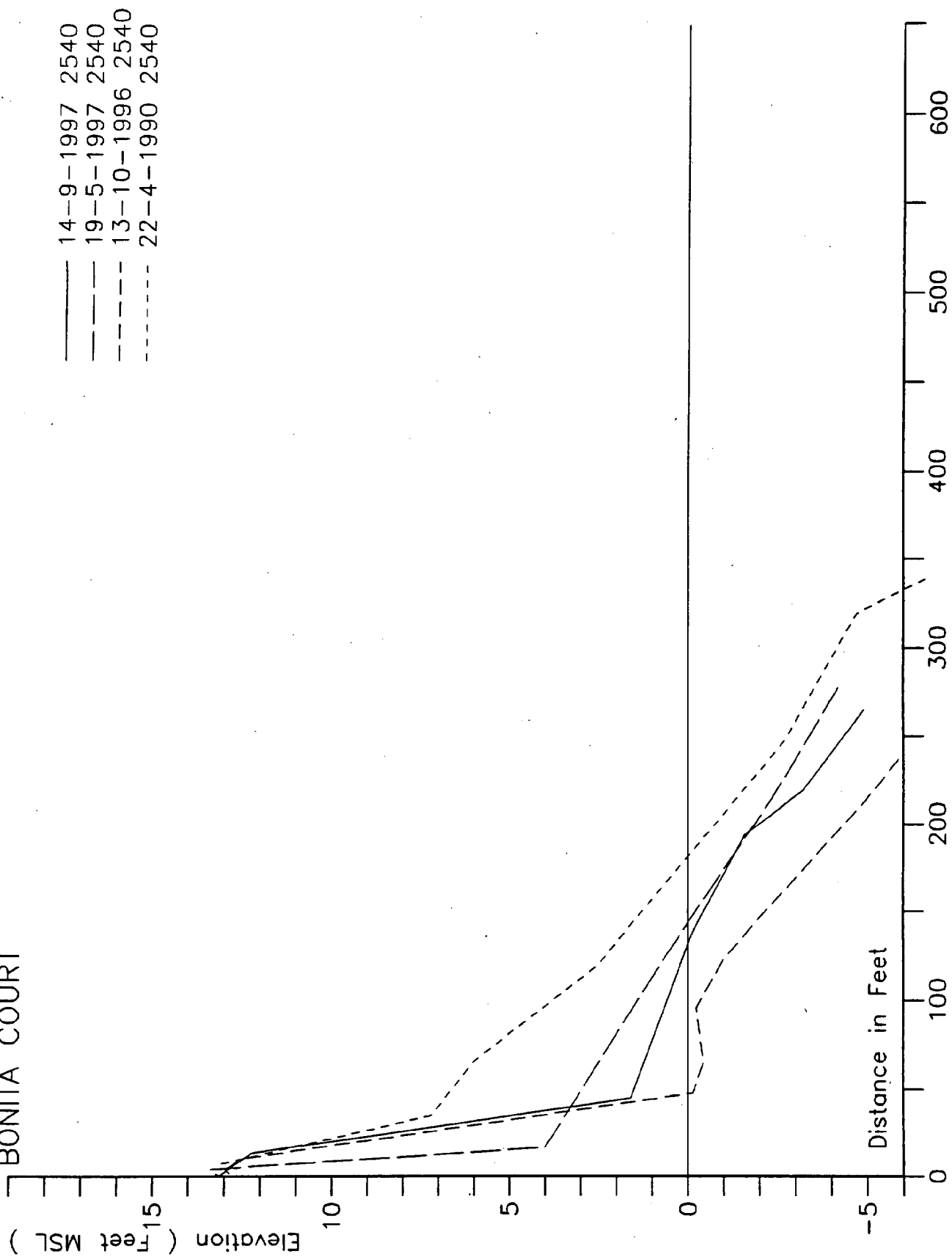
## ***Seabrook Island***

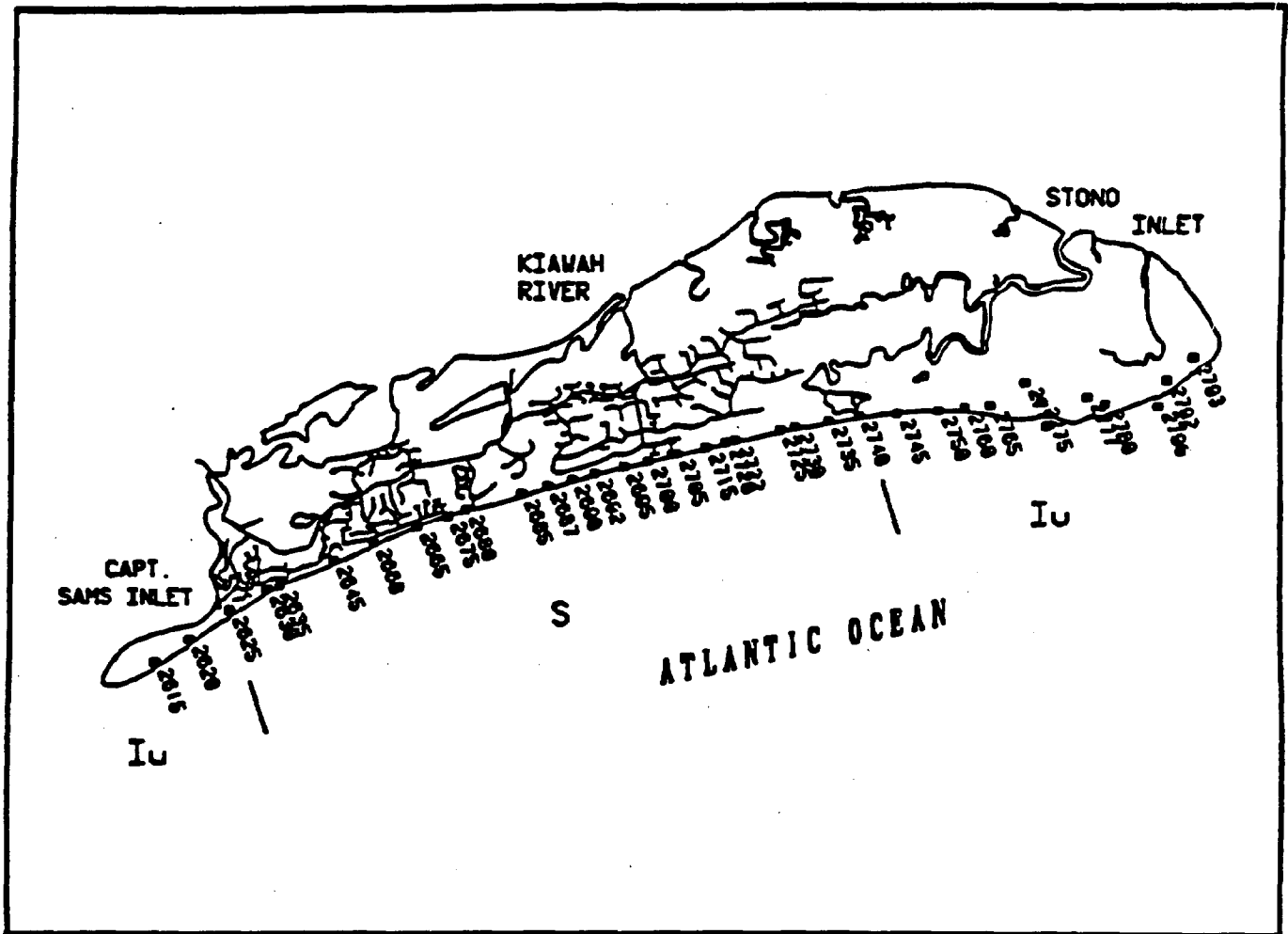
Seabrook Island is a barrier island approximately 4 miles long, situated between North Edisto Inlet and Captain Sams Inlet. Development on the island is a mix of single-family and multi-family structures. A continuous 5000-foot section of shoreline is armored with rock revetments and a few seawalls. The entire island is classified as an inlet zone—the armored portion is a stabilized inlet zone, while the remainder is unstabilized. Shoreline change patterns have been quite dynamic over the past 50 years. There are 11 beach monitoring stations here, which were surveyed during May and September 1997.

Station 2515, at Beach Club Villas along the North Edisto River, was quite dynamic during 1997, losing 34 cubic yards of sand from October 1996 through May 1997, and then gaining back 41 cubic yards from May to September. Stations 2520 through 2540 are located along the revetment. Stations 2520 at the Beach Club gained 10 cubic yards of sand at the base of the revetment during the past year, as did station 2525 at the boat ramp. Station 2530 on Beach Court also gained 10 cubic yards of sand at the base of the revetment, while station 2540, at Renken Point on Bonita Court, gained 12 cubic yards of sand at the base of the revetment.

In the North Beach area, from station 2545 to 2575, the high-tide beach averages over 500 feet in width. This area can be very dynamic, and has experienced some erosion during the past several years. At station 2545 on Cobia Court the two most recent surveys were conducted in May 1996 and September 1997. During this 16 month period, the dune field transformed somewhat but the intertidal beach was fairly stable and the high-tide swash line is still 300 feet seaward of the buried rock revetment. At station 2555, on Pompano Court, the active beach profile gained 60 cubic yards of sand. Station 2565, at Seascape Court, gained a similar volume of sand. At station 2570, on Catesby Bluff, the profile below the 0 foot contour eroded back by several hundred feet, reversing a 1996 trend of tremendous accretion. The profile at station 2575 on Rolling Dunes Road also lost almost one hundred cubic yards of sand during 1997.

# 2540 Seabrook Island BONITA COURT





Kiawah Island

## ***Kiawah Island***

Kiawah Island is a ten-mile long barrier island, located between Seabrook Island and Captain Sams Inlet to the west, and Stono Inlet and Folly Beach to the east. Kiawah is one of the most stable barrier islands in the state, although the eastern and western ends of the island are more dynamic due to their proximity to inlets.

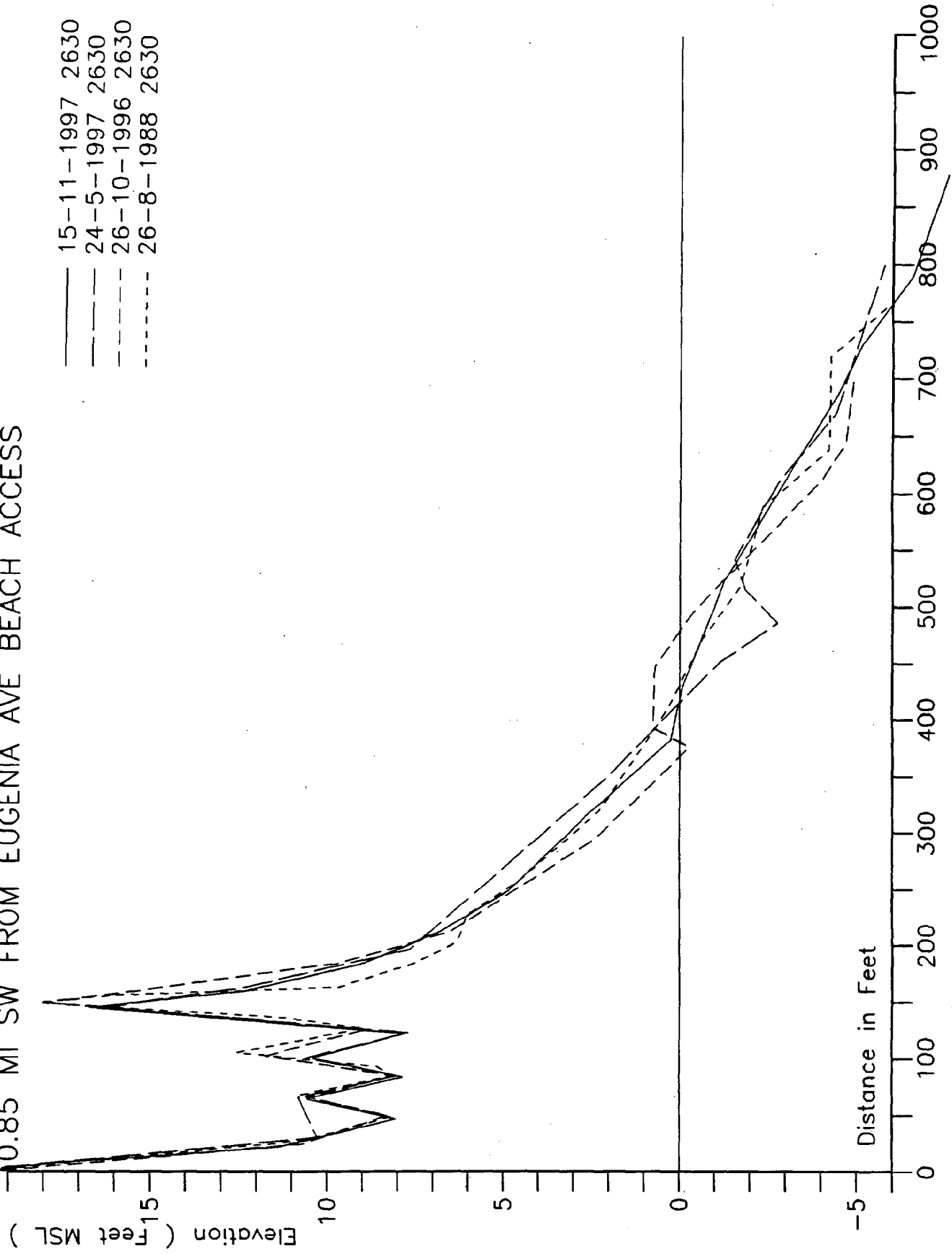
The 25 beach monitoring stations on Kiawah Island were surveyed in May and November 1997. Stations 2615 through 2645 are located at the western end of Kiawah, where land use consists of undeveloped property, single family homes, and some multi-family structures. Stations 2615 and 2620, closest to Captain Sams Inlet, were the most dynamic during the past year, gaining 13 and 16 cubic yards of sand respectively. Other stations here were more stable.

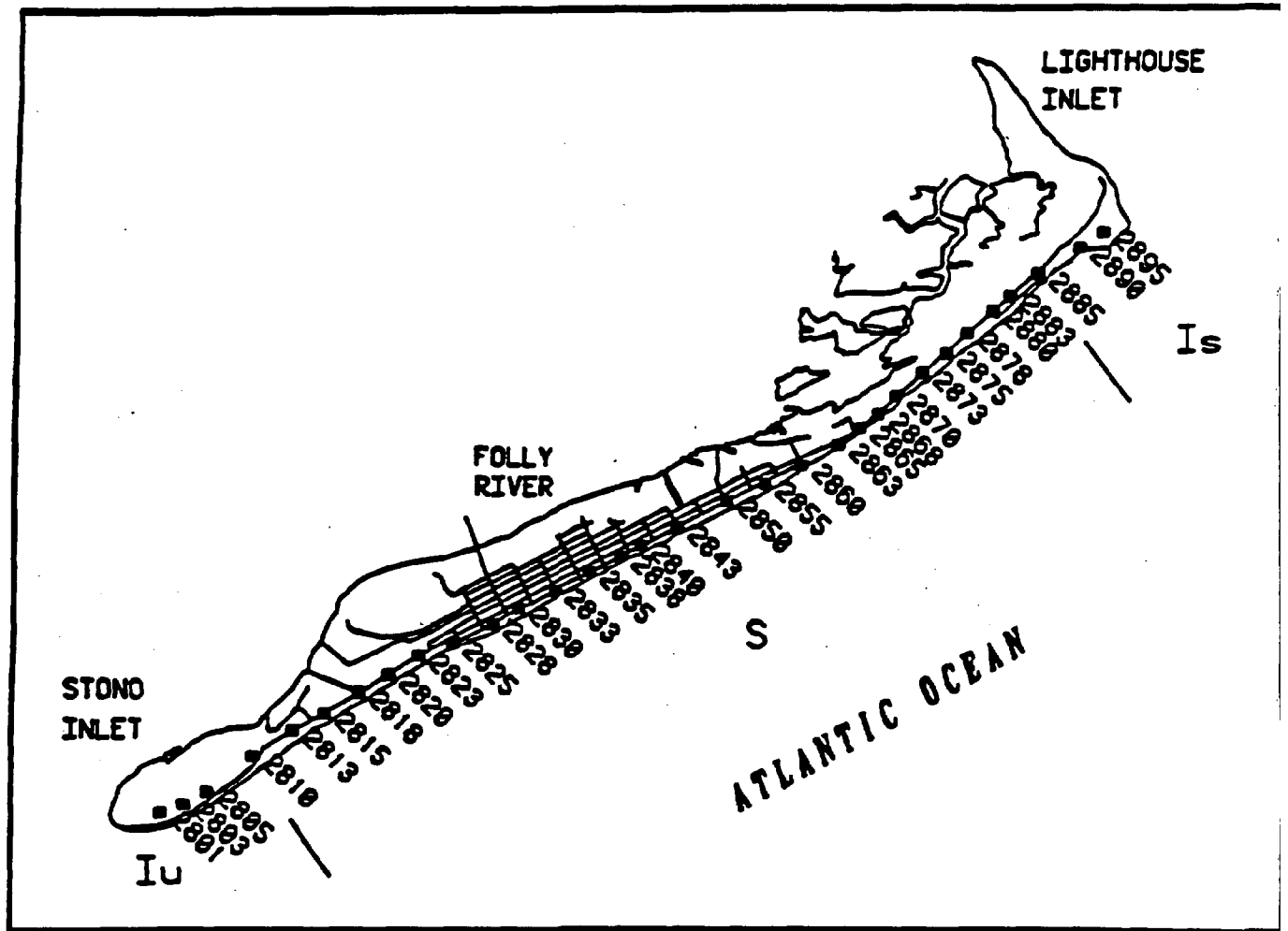
The area from station 2660, near the middle of Eugenia Ave., through station 2680, at the eastern end of Windswept Villas, experienced significant erosion in 1995 and 1996. During 1997 this trend reversed and most stations gained sand, typically 8 to 12 cubic yards. Farther to the northeast most stations gained sand as well. While station 2690 lost 5 cubic yards from the intertidal beach in 1997, station 2695 gained 5 cubic yards, 2700 was stable, stations 2705 and 2715 gained 6 yards, and 2720 lost 1 yard.

Oceanfront development along the eastern half of Kiawah, from station 2725 to 2785, is limited to some single-family structures, a golf course and associated amenities. Beach profile changes here historically have been more dramatic than along the western half of Kiawah, and become more pronounced as proximity to Stono Inlet increases. During the past year stations 2725-2760, from Flyway Drive to the Ocean Course, all experienced moderate seasonal changes, ranging from a gain of 17 cubic yards to a loss of 18 cubic yards.

Stations 2775 to 2785 are closest to Stono Inlet and the most dynamic. Station 2775 lost 30 cubic yards of sand seaward of the primary dune, while station 2780 lost over 60 yards between November 1995 and November 1997. The profile at 2785 showed only minor seasonal changes on the intertidal beach for the past year.

2630 Kiawah Island  
0.85 MI SW FROM EUGENIA AVE BEACH ACCESS





Folly Beach

## **Folly Beach**

Folly Beach is located between Stono Inlet and Lighthouse Inlet. Nearly all of Folly's shoreline is armored and contains groin fields. There are 33 monitoring stations here, which were surveyed by the Corps of Engineers in February and August 1997. These profiles are unique within the statewide data set because they all extend several thousand feet offshore, to depths reaching or exceeding -15 feet.

At the western end of the island in the county park, stations 2803 and 2805 continued to experience a trend of significant erosion that began in 1995. The upper beach at both stations scarped back by 50-75 feet between May 1996 and August 1997. Station 2810, at the park gatehouse, showed only moderate berm erosion from May 1996 to February 1997. The rest of the profiles on the western side of the island, from station 2813 near the end of Ashley Ave. West to station 2825 at 3<sup>rd</sup> Street West, showed no dune scarping and only minor seasonal changes on the intertidal portion of the profile.

At station 2828, in front of the Holiday Inn seawall, the profile to -5 feet showed a moderate gain of sand during the past year. Station 2930, which runs alongside the wingwall on the northeast end of the seawall, showed very little change.

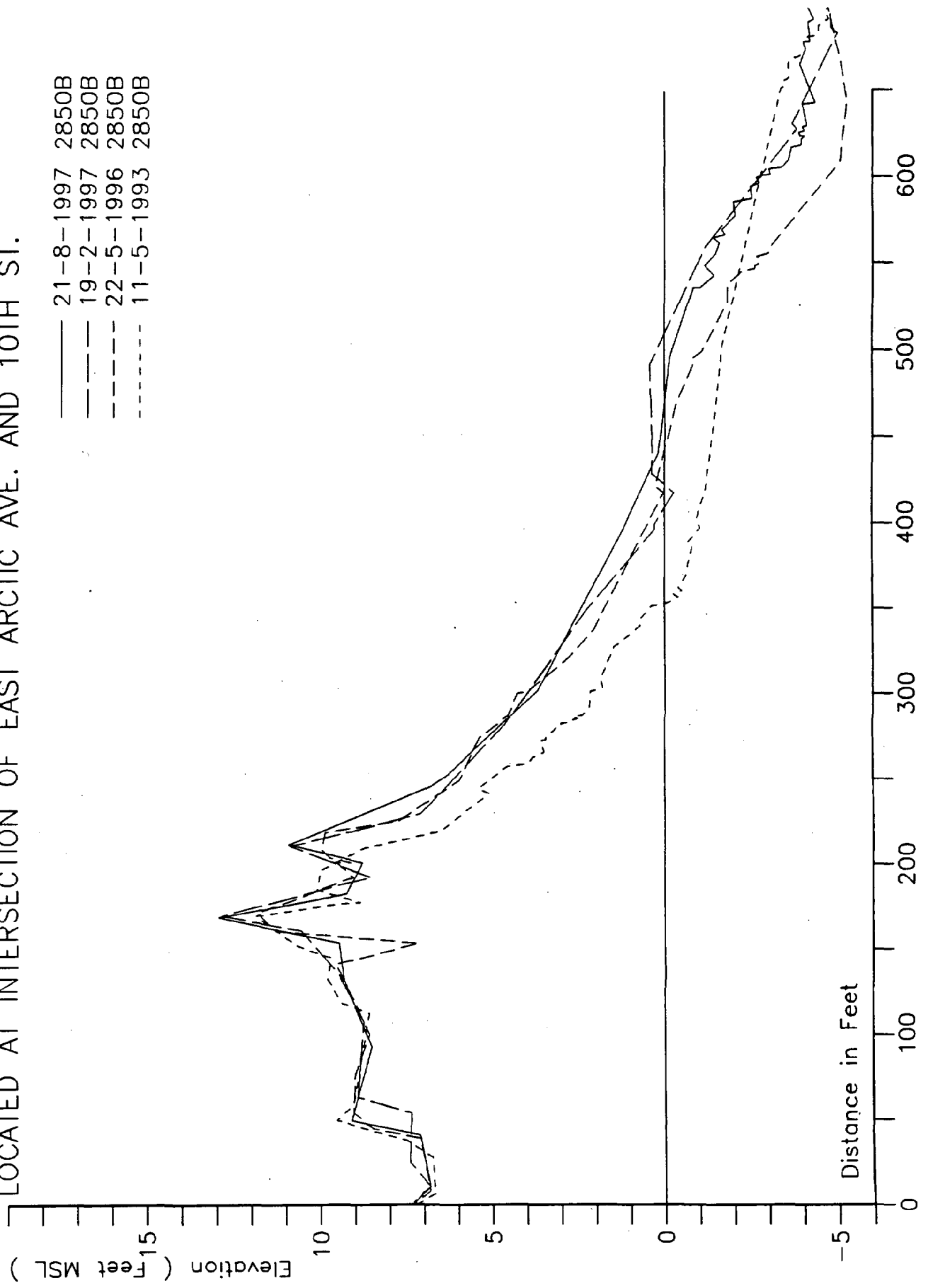
The next section of beach is the first twelve blocks east of the Holiday Inn, up to the Washout. Stations 2833 to 2855 are located here. While most profiles show considerable changes on the intertidal beach, particularly the lower beach face, the dune and upper beach were stable. The area commonly referred to as the Washout extends from stations 2860 through 2873. The ocean is closest to the road in this section of beach, and there are no residential lots on the seaward side of Ashley Ave. Station 2860, at the 13th Ave. East dune walkover, gained sand on the lower beach, while station 2863, at the last oceanfront lot west of the Washout, experienced a moderate decrease in upper beach width. In the middle of the Washout, stations 2865 and 2867 both gained a significant amount of sand on the lower profile while the upper beach was stable. Located among the first houses east of the Washout, 2873 also showed a net gain of sand on the lower beach.

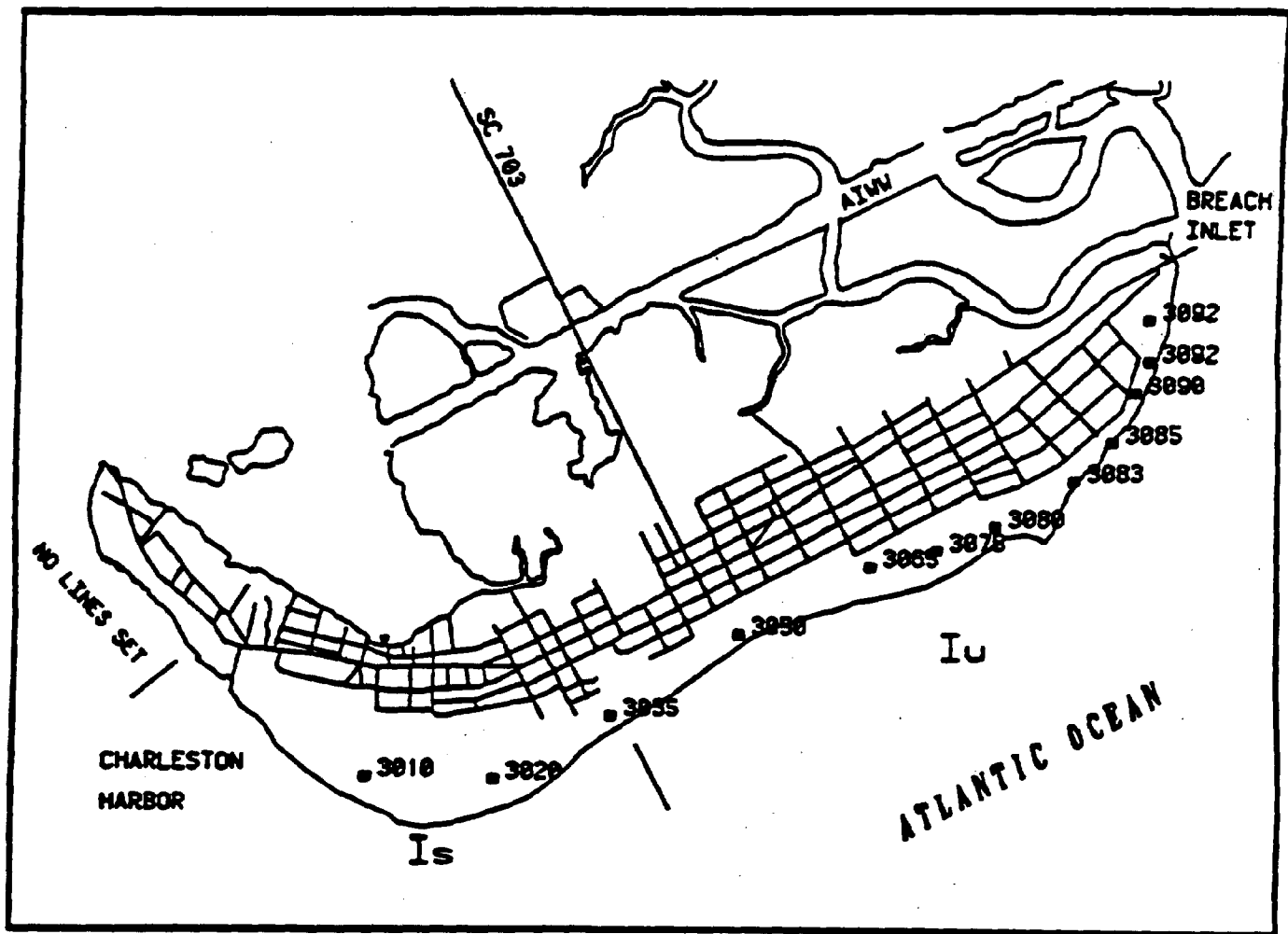
The region east of the Washout, stations 2878-2890, generally experienced growth of the primary sand dune and accretion on the active beach seaward of the dune. At station 2878 the primary dune increased in height by four feet. The only station in the region that did not follow this trend was station 2890, where the wading-depth profile seaward of the high-tide swash line was eroded back by over 100 feet.

Using the offshore portion of the survey data that is only available at Folly Beach, it is also possible to look at changes in the profile farther seaward than the usual limit of low-tide wading depth. Almost all profiles at Folly Beach show offshore accretion between May 1996 and February 1997, and then virtually no change between February and August 1997. In most cases the accretion resulted in a 1-2 foot vertical increase in profile height, at offshore distances of 2000-3000 feet, in water depths of -12 to -15 feet.



# 2850B FOLLY LOCATED AT INTERSECTION OF EAST ARCTIC AVE. AND 10TH ST.





Sullivan's Island

## ***Sullivans Island***

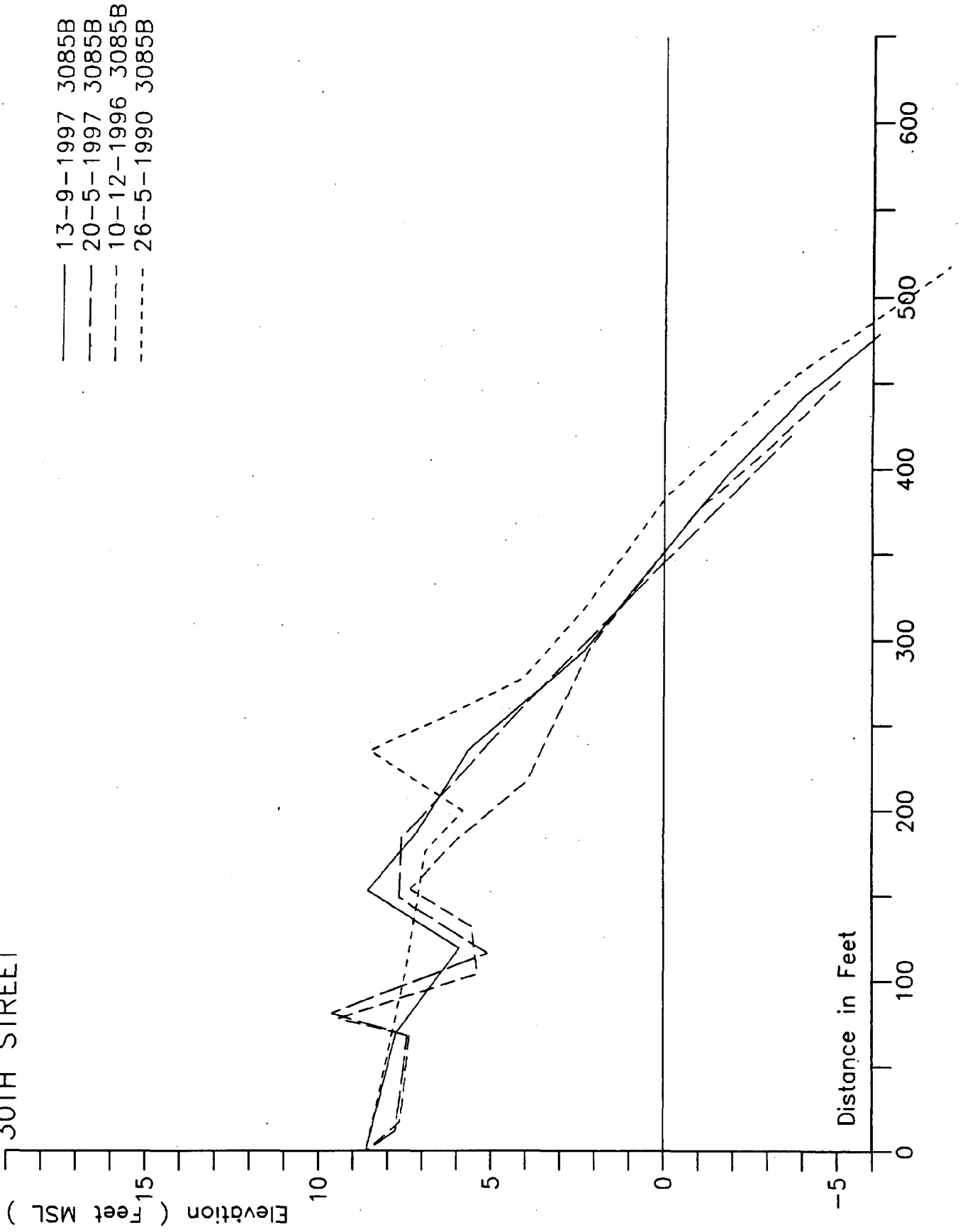
Sullivans Island is located between Charleston Harbor and Breach Inlet. The Charleston Harbor north jetty, which comes ashore on Sullivans Island, has caused the long-term shoreline trend to be stable or accretional for much of the island, although periodic shoal attachment at Breach Inlet can cause the shoreline in this region to be quite dynamic. Beach surveys were conducted in May and September of 1997.

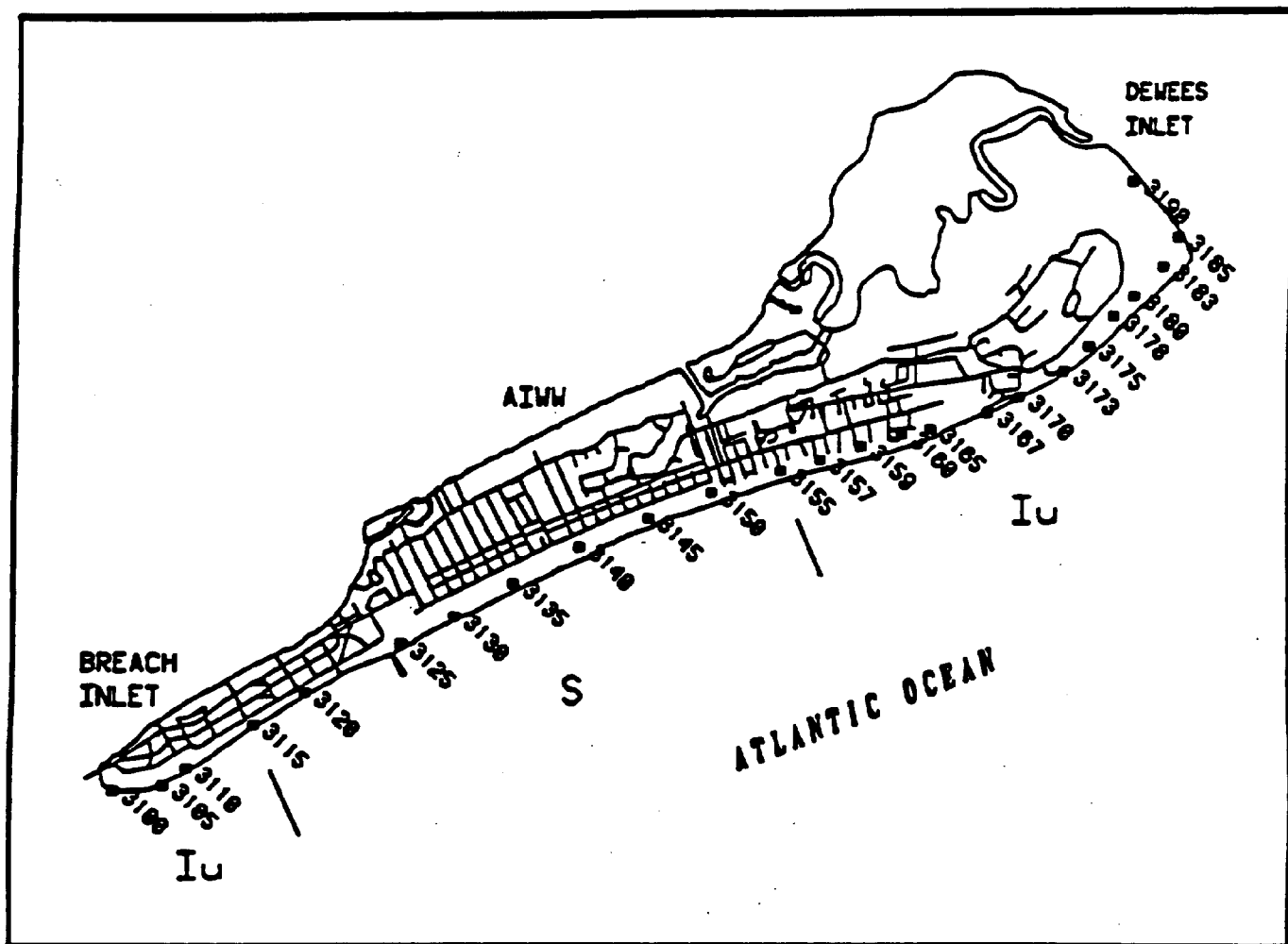
Survey monuments 3010-3035, between Station 16 and Station 19, are located within the Charleston Harbor north jetty. This area is extremely accretional in the long-term but has been stable to erosional for the past several years. Profiles here showed very little change during 1997.

Survey monuments 3050-3080 are located along the center section of Sullivans Island, outside the north jetty. Sand shoals from Breach Inlet periodically attach to the beach here, and while long-term trends are accretional the shoreline is quite dynamic. At 3065B, near Station 26, a newly forming sand dune has increased in size as the profile gained 15 cubic yards of sand from May to September. At 3080, near Station 28, a sand ridge on the intertidal beach has increased in size and the profile here has also gained 15 cubic yards of sand from May to September.

Monuments 3083 and 3085 are located in the transition zone between the accretional center section of the island and the erosional northeastern end of the island, along Breach Inlet. The beach profile at 3083, near Station 29 and close to the first groin in the groin field, lost 16 cubic yards of sand below the high-tide swash line as the 0 foot contour moved landward by 50 feet. At 3085, located near Station 30, the upper beach gained 11 cubic yards of sand from sand scraping. This section of beach has been the most strongly erosional over the past few years. At 3090, near Station 30, the profile shows evidence of sand scraping from December 1996 to May 1997 but a net loss of 10 cubic yards of sand for the year.

3085B Sullivans Island  
30TH STREET





Isle of Palms

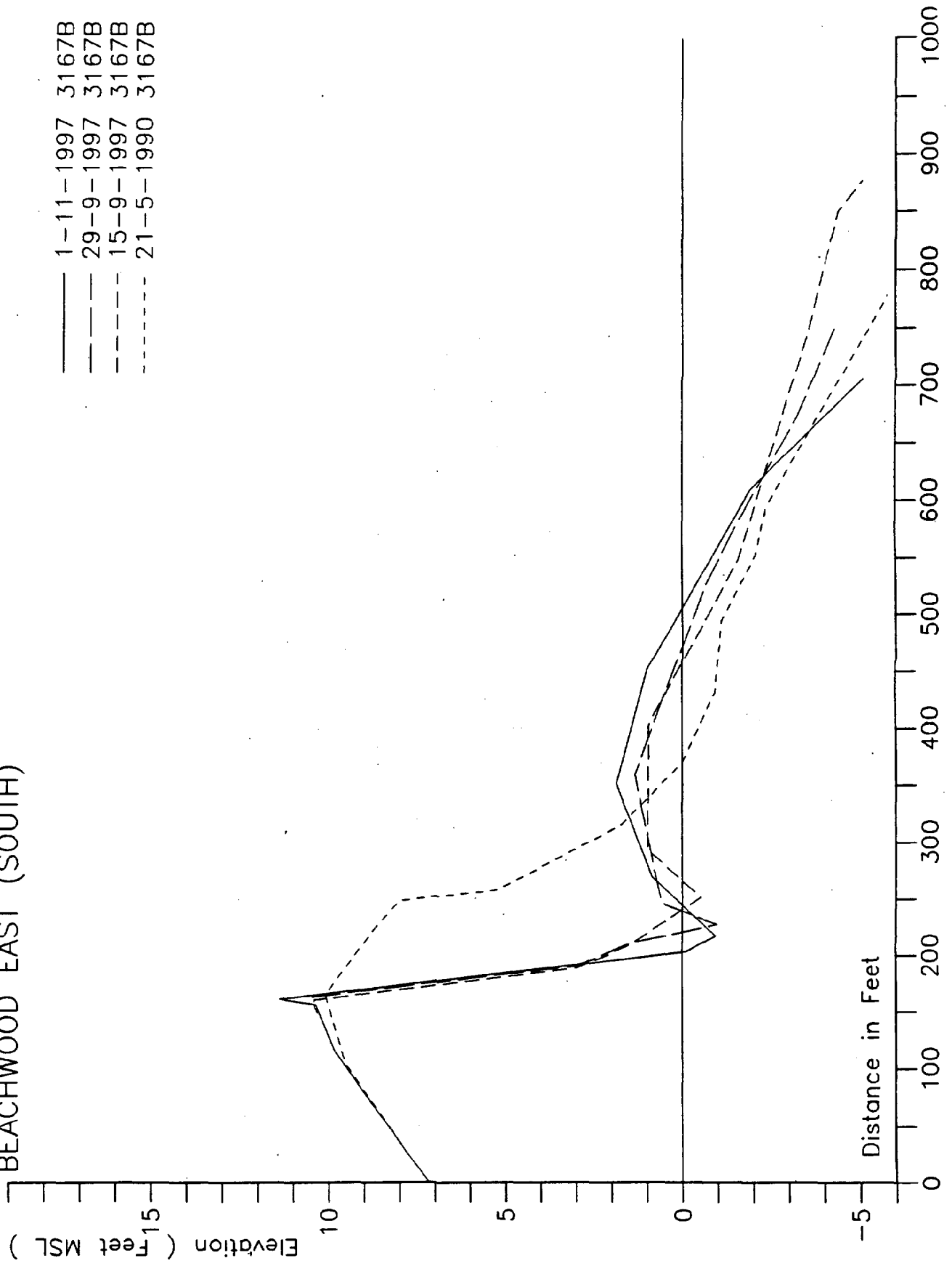
## ***Isle of Palms***

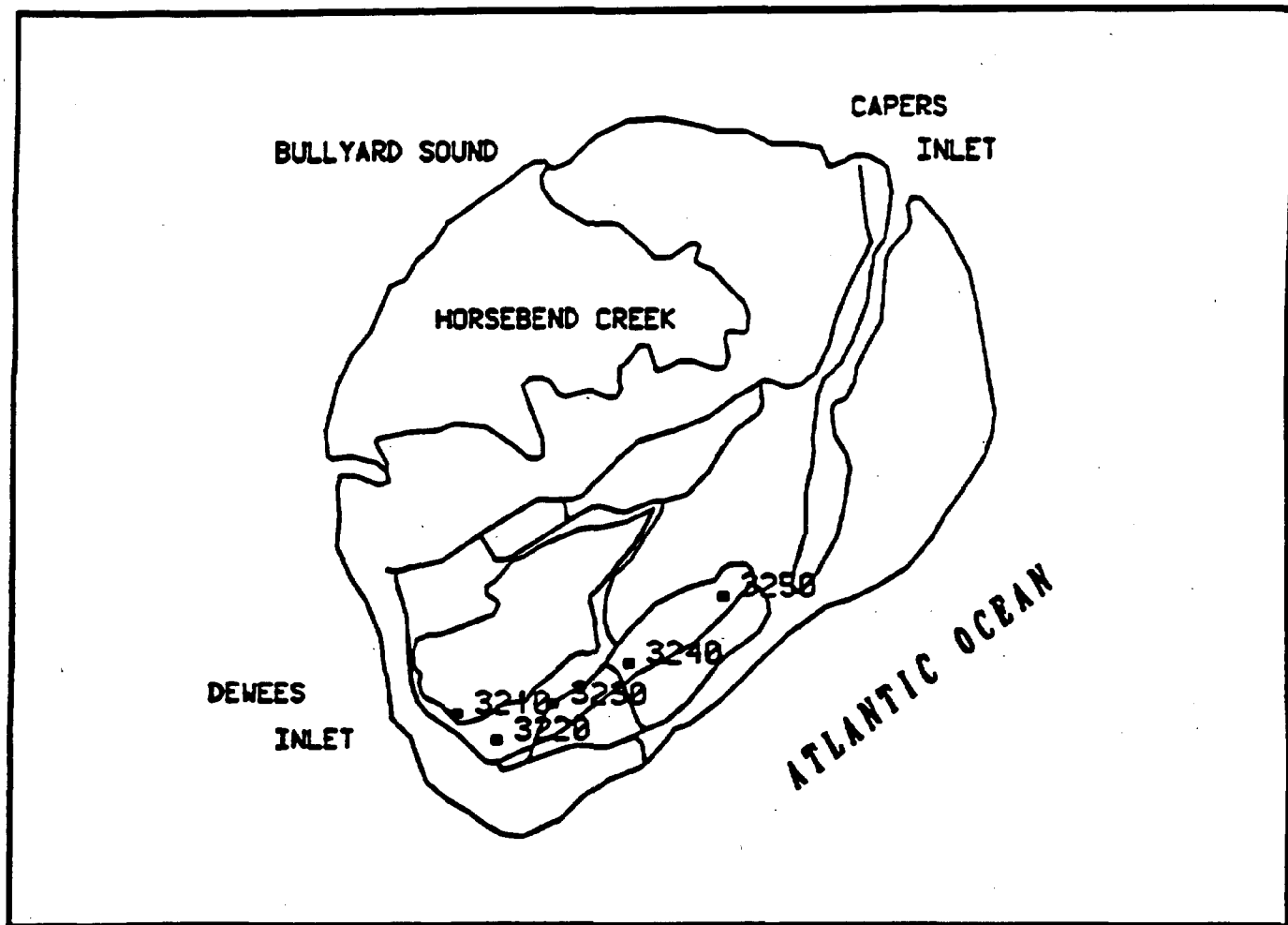
The Isle of Palms is located between Breach Inlet and Sullivans Island to the south, and Dewees Inlet and Dewees Island to the north. The island is generally accretional, primarily because the downdrift Charleston Harbor jetties interrupt the longshore flow of sand from north to south. There are 22 monitoring stations on the Isle of Palms, which were surveyed in May and October 1997. Stations 3100-3110, from Breach Inlet to 3<sup>rd</sup> Ave., are influenced by the inlet's channels and shoals and are usually more dynamic than the central portion of the island. At 3100 the profile below the 5 foot contour reversed a 1996 trend and eroded substantially. Near 2<sup>nd</sup> Ave. station 3105 gained 11 cubic yards of sand on the intertidal beach, while 3110, at 3<sup>rd</sup> Ave., showed slight accretion.

Stations 3115-3157, from 6<sup>th</sup> Ave. to 50<sup>th</sup> Ave., are located along the more stable portion of shoreline in the center of the island. Beach profiles here typically show minor to moderate seasonal variations from year to year, with a few exceptions. During 1997, stations 3115 to 3140, at 31<sup>st</sup> Ave., showed a mix of slight accretion to virtually no change, with no predominant trend. At station 3150, near 41<sup>st</sup> Ave., the beach became more active and the trend became erosional. This station lost 25 cubic yards of sand, all below the 0 foot contour. Station 3155 was stable but station 3157, at 50<sup>th</sup> Ave, lost 27 cubic yards of sand, also below the 0 foot contour.

Beginning at station 3159 near 53<sup>rd</sup> Ave. and continuing on into Wild Dunes, beach profiles are close enough to Dewees Inlet to be effected by periodic bar bypassing from the inlet shoal complex, and as a result profiles here are more dynamic than the rest of the island. These shoal attachment episodes cause extreme accretion in the area of shoal attachment and severe but localized erosion immediately adjacent to the attachment site. The most recent shoal attachment occurred in the fall of 1996, and beach profiles here are still adjusting in response. Station 3159, at 53<sup>rd</sup> Ave., had experienced considerable erosion during 1996 but gained 28 cubic yards of sand over the past year. Station 3160 at 56<sup>th</sup> Ave. lost 27 cubic yards of sand. Station 3167, at the southwest end of Beachwood East, experienced some of the worst erosion on the southwest side of the

# 3167B Isle of Palms BEACHWOOD EAST (SOUTH)





Dewees Island



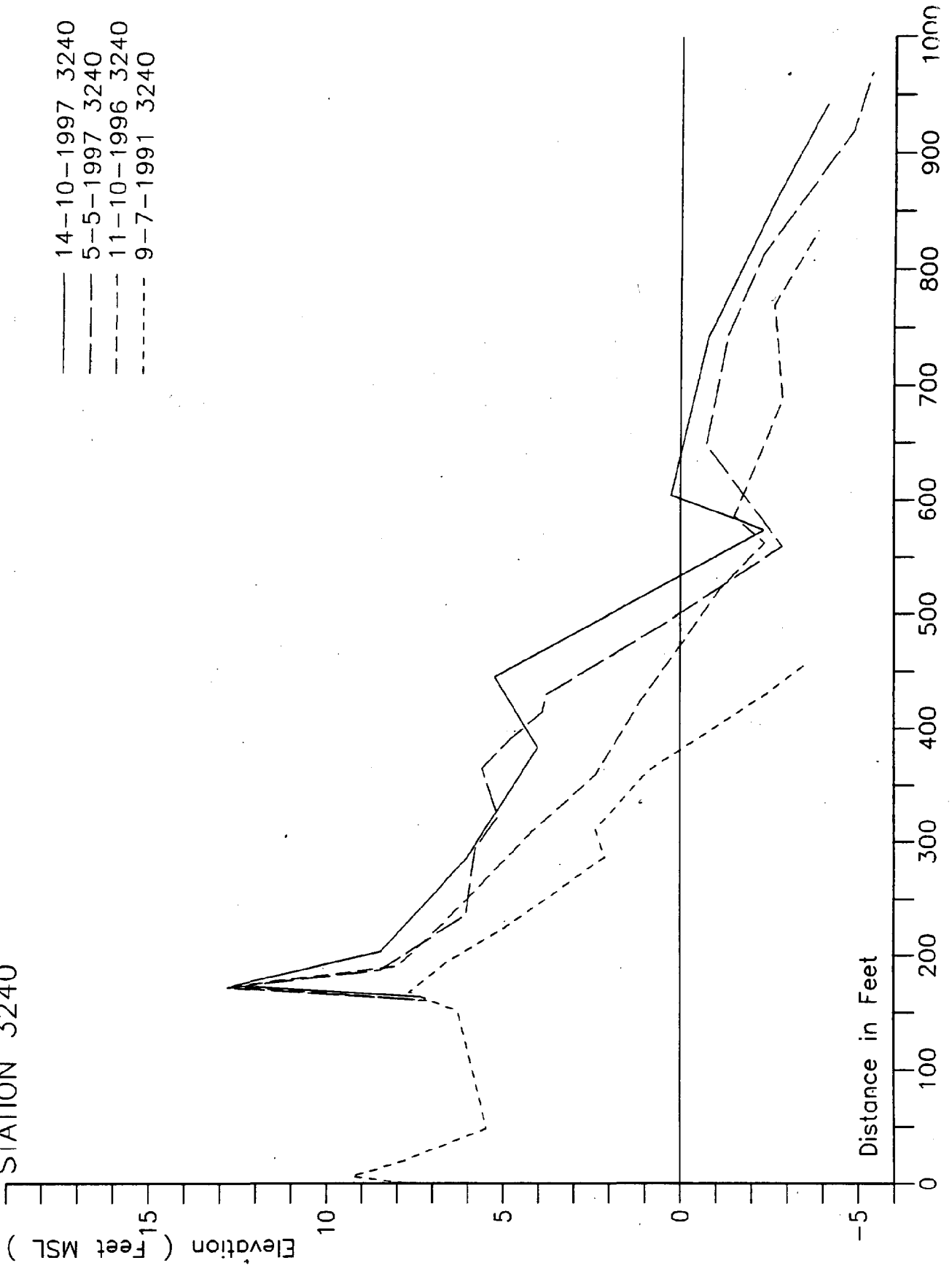
## ***Dewees Island***

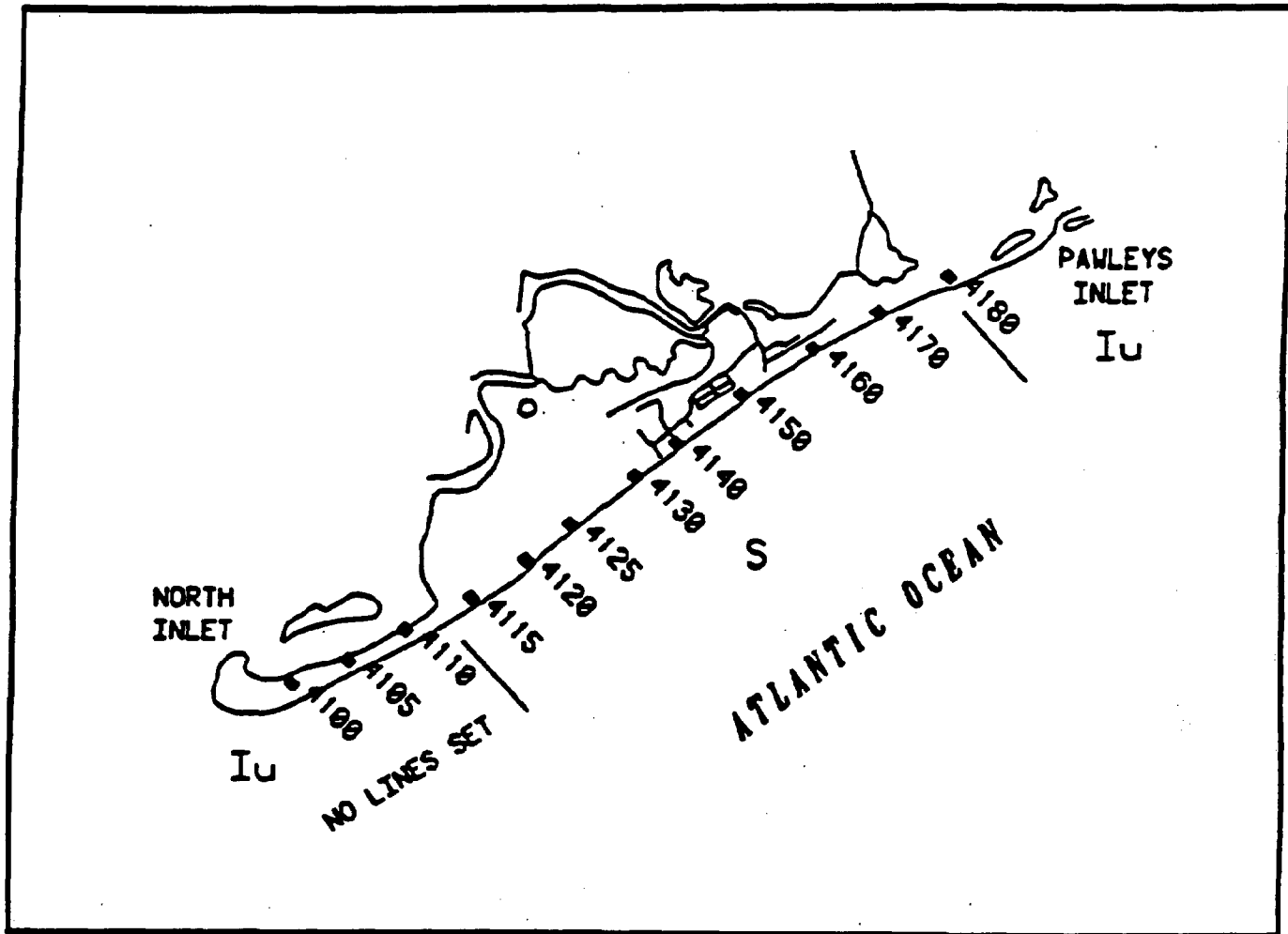
Dewees Island is located between Dewees Inlet to the southwest, and Capers Inlet to the northeast. The island is approximately two miles long, and is classified as an unstabilized inlet zone. The shoreline is very dynamic, with long-term erosion rates of -5 to -10 feet per year. There is limited single-family development here. There are 10 monitoring stations on Dewees Island, which were surveyed in May and October 1997.

Station 3220 is located on top of a bluff along Dewees Inlet. The beach profile lost 35 cubic yards but still contains over 260 cubic yards of sand, as the high-tide swash line is more than 500 feet seaward of the bluff. Station 3230, 1000 feet to the northeast, gained 25 cubic yards of sand, mostly the result of primary dune accretion. The profile at station 3240 gained 52 cubic yards of sand, mostly on the berm and upper intertidal beach. The last station southwest of the dike, 3250, gained 32 cubic yards of sand, mostly on the lower intertidal beach.

On the dike at station 3255, the profile sand volume increased by 28 cubic yards. Station 3260 gained sand over most of the profile but experienced erosion below mean low water, for a net volume change of +6 cubic yards. At station 3270, just northeast of the dike, the beach gained 21 cubic yards of sand as a bar moved onto the upper beach but the lower profile experienced an even greater magnitude of erosion. At station 3280, a runnel with a depth of -4 feet separates the beach from a massive sand bar. While the runnel and the beach landward of the runnel showed little change for the year, the offshore sand bar increased in height by 3 feet as the sand coalesced and began to move landward. Station 3290 is the station northeast of the dike and closest to Capers Inlet. Like station 3280, a channel separated the beach from an offshore sand bar. In this case the channel is a marginal flood channel for Capers Inlet, with a depth of -2 feet. Again like station 3280, the beach and channel were fairly stable in 1997 while the bar coalesced and moved farther landward.

3240 Dewees Island  
STATION 3240





Debidue Island

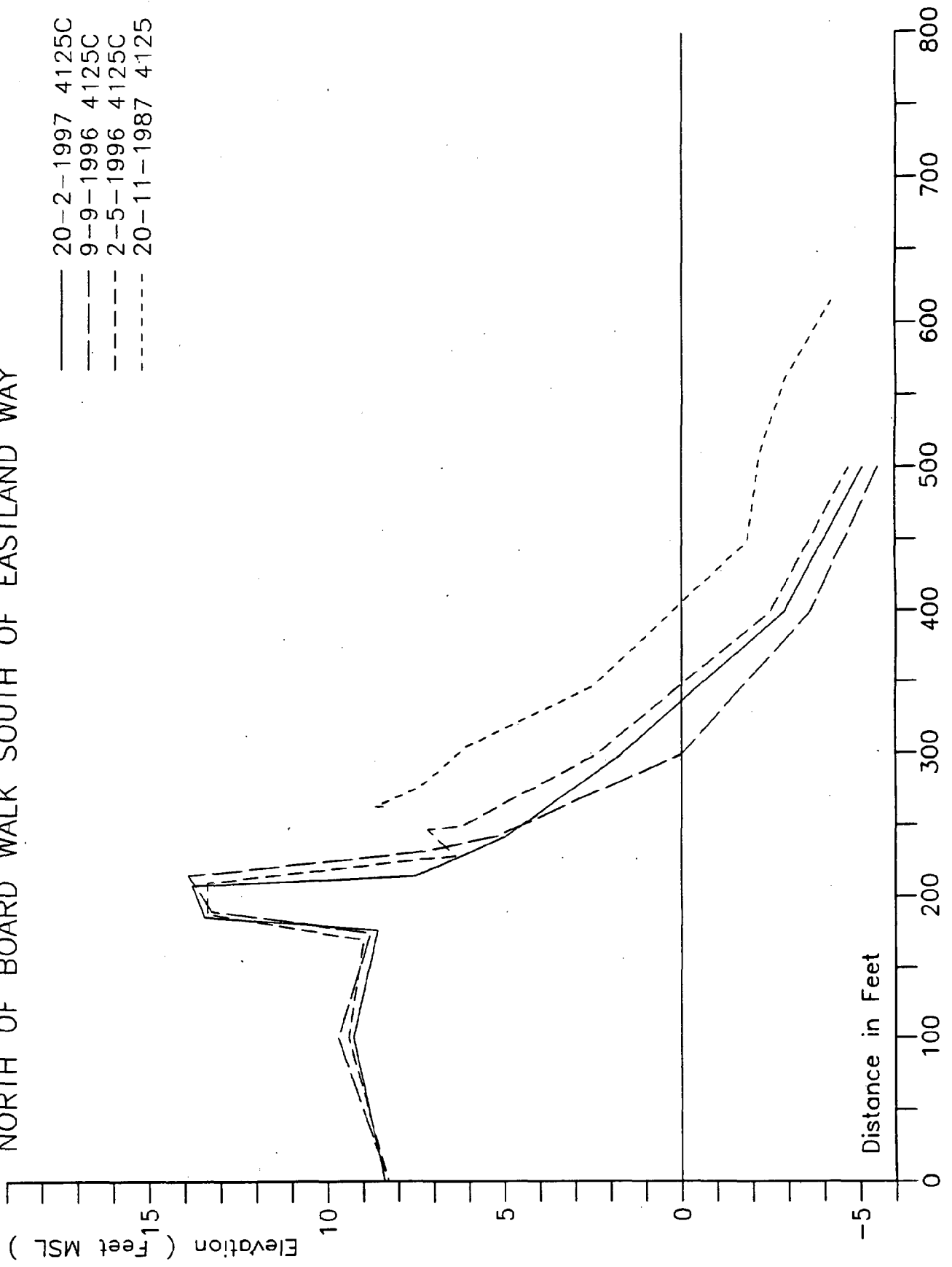
## ***Debidue Beach***

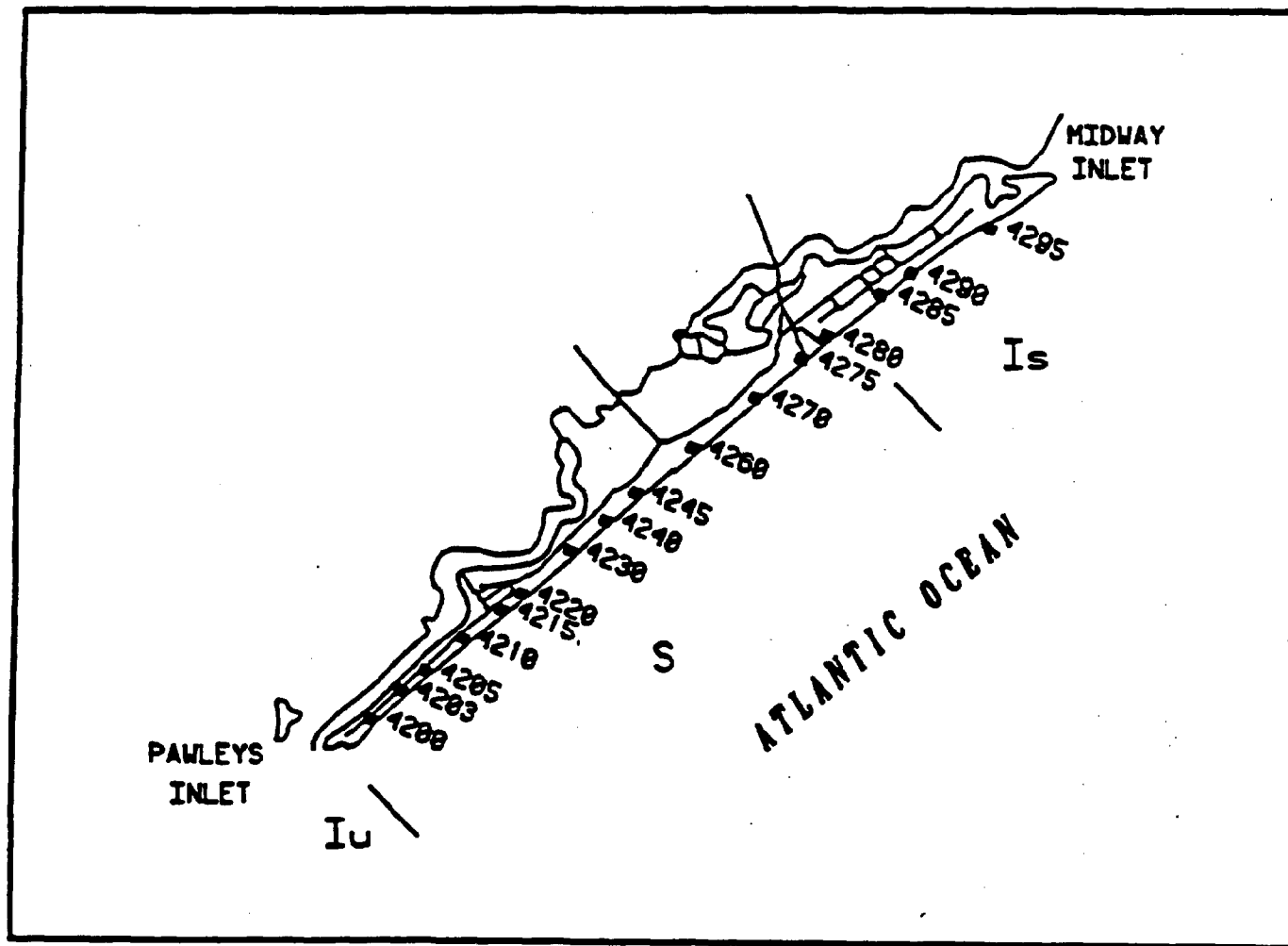
Debidue Beach, located between North Inlet and Pawleys Inlet, is the southernmost of the Grand Strand beaches. The central portion of Debidue is armored with a continuous 4500-foot long bulkhead. The area south of the bulkhead has experienced long-term erosion rates of -8 to -12 feet per year, while the area north of the bulkhead is stable to accretional. There are ten survey stations at Debidue, which were surveyed in February and April of 1997 but were not surveyed in the fall of 1997.

At monument 4115, the station closest to North Inlet, the upper beach scaped back almost 30 feet between September 1996 and February 1997 but unit-width volume decreased by only 3 cubic yards per foot, as the eroded sand shifted below the mean sea level contour. At 4120 the profile was fairly stable. Station 4125, the last station south of the bulkhead and the first station within Debordieu Colony, experienced 13 feet of dune scarping but a slight volumetric gain. The beach in this area has been periodically scraped, where sand is moved from the lower profile to the upper profile by heavy equipment. At the south end of the bulkhead, station 4130 saw little change from September 1996 through April 1997. Station 4140 is at the northern end of the bulkhead, where the upper beach seaward of the wall increased in height by several feet and the net sand volume gain was 6 cubic yards.

Stations 4150-4180 are located north of the bulkhead. This is a mostly undeveloped, accretional area with an extensive dune field. Station 4150, at the northern end of Pioneer Court, showed only minor changes from September 1996 through February 1997. At station 4160 the upper beach accreted by 50 feet, almost exactly offsetting a 1996 episode of berm erosion. The net volume change was an increase of 7 cubic yards per foot. Station 4170 experienced minor seasonal changes through April 1997. Finally, station 4180, closest to Pawleys Inlet, experienced an increase in sand volume of 23 cubic yards per foot, which partially offset a 1996 sand volume decrease of 45 cubic yards per foot.

4125C Debidue Beach  
NORTH OF BOARD WALK SOUTH OF EASTLAND WAY





Pawleys Island

## ***Pawleys Island***

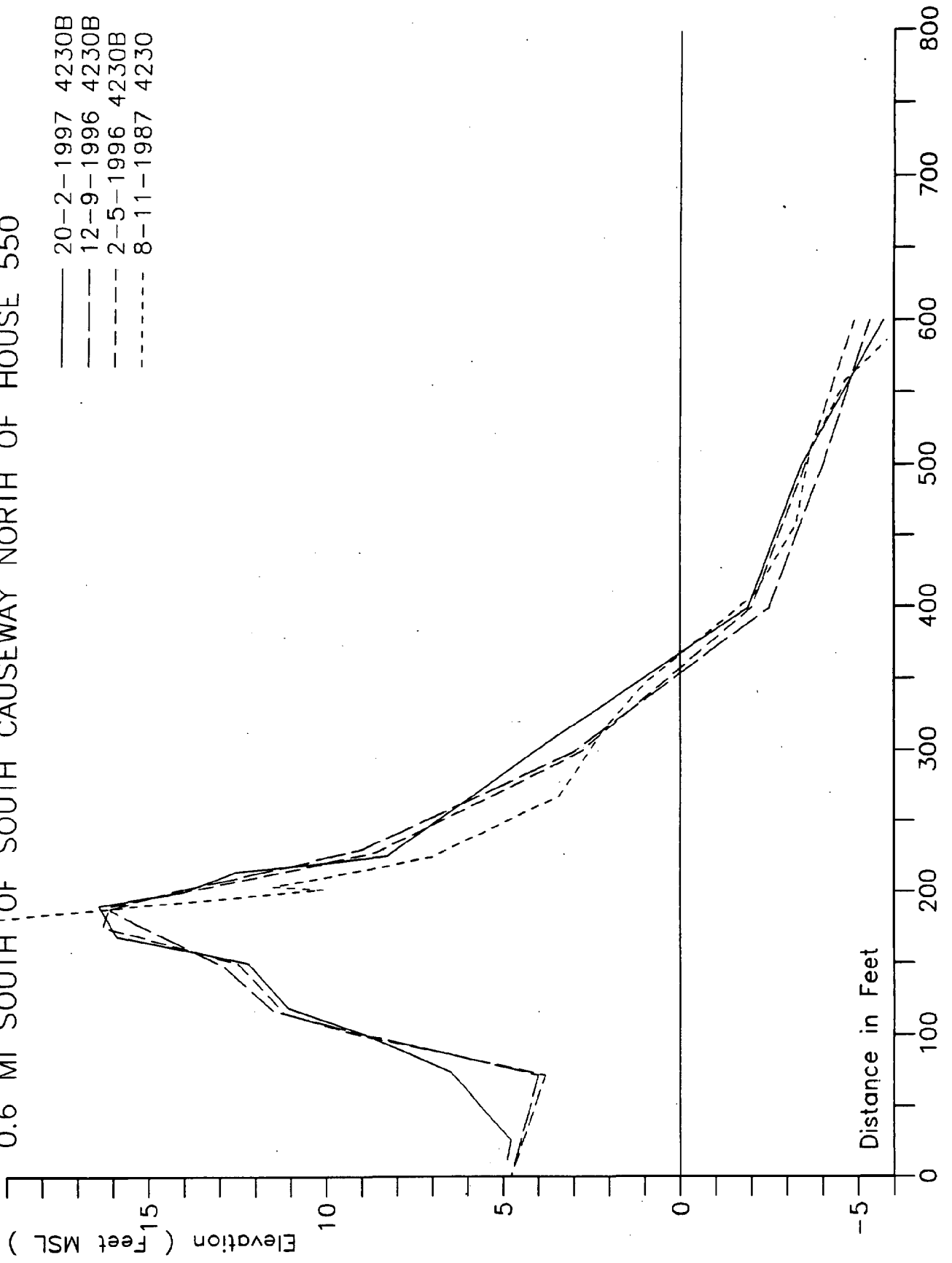
Pawleys Island is located between Pawleys Inlet and Midway Inlet. Groin fields on Pawleys have counteracted a slight erosional trend to produce a stable shoreline. The southern portion of Pawleys is low-lying, with little or no sand dunes. The central portion has some of the highest dunes in the state, while the northern, accretional end has a wide field of low dunes. Sixteen monitoring stations were surveyed in February and April of 1997, but were not surveyed in the fall of 1997.

For stations 4200-4215, located at the low-lying southern end of Pawleys Island, most profiles experienced moderate erosion. At 4200 the dune scarped back as the profile lost 5 cubic yards per foot of sand. Stations 4203 and 4205 both saw minor erosion along the beach face. Station 4210 was the only profile to show accretion, gaining 8 cubic yards. The lower beach at 4215 lost sand, for a net profile loss of 6 cubic yards per foot.

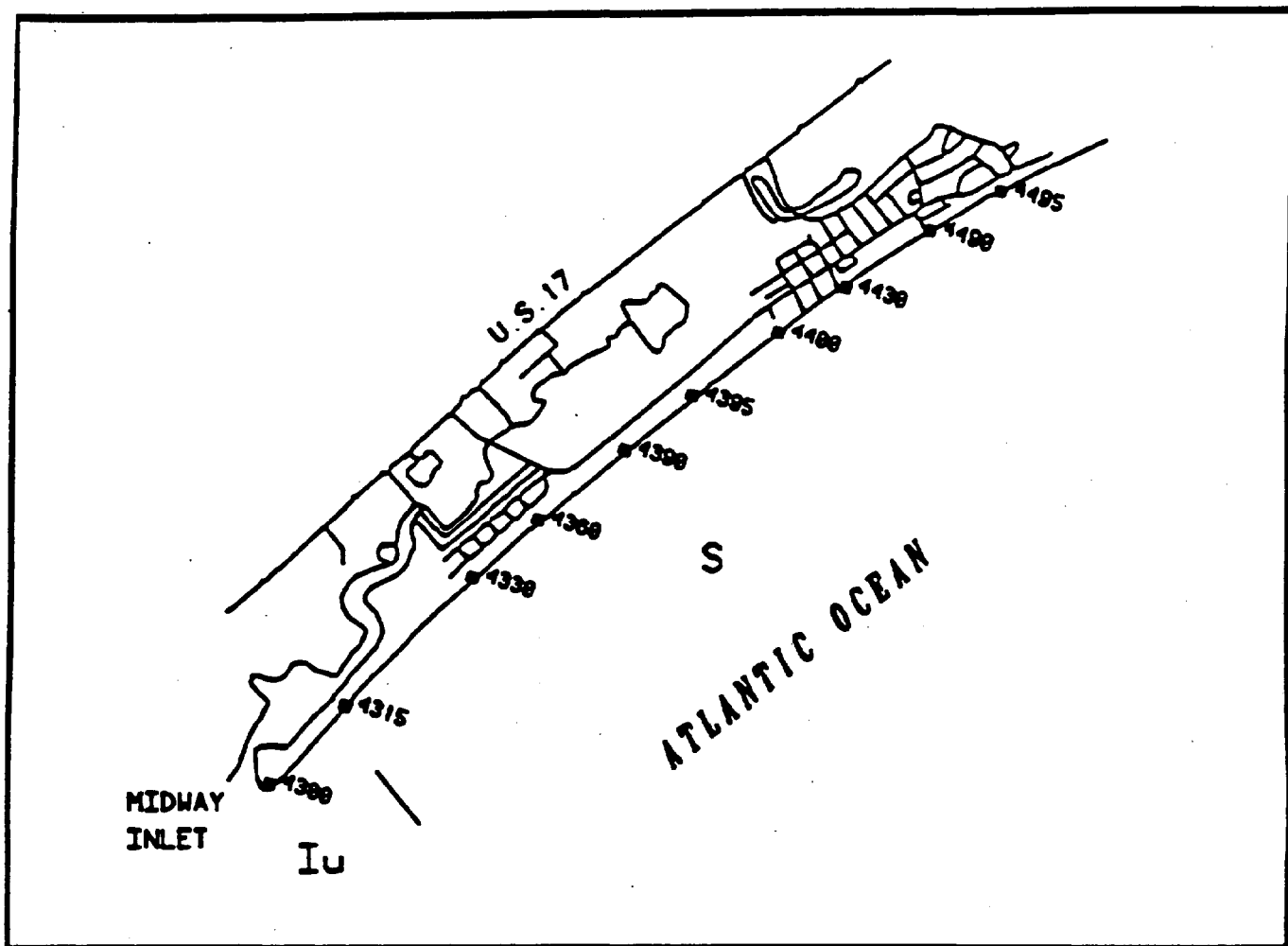
The central portion of Pawleys Island, with a large primary dune, is represented by stations 4220-4280. Most stations here experienced moderate changes to the profile, with a few showing net volume changes larger than are typically seen here. Station 4220 lost 38 cubic yards of sand from the entire profile, as a 1996 trend of strong accretion was reversed. Stations 4230 and 4240 both gained 6 cubic yards of sand, mostly on the lower beach. Station 4245 lost 12 cubic yards of sand as a small berm present in September 1996 was eroded. Stations 4260 and 4270, north of the south causeway, both experienced only minor seasonal changes. At 4275, near the north causeway, the lower beach profile gained 13 cubic yards per foot of sand. Station 4280 showed the largest increase, gaining 26 cubic yards of sand over the entire profile seaward of the dune.

Stations closest to Midway Inlet, where the beach is wider and more dynamic, were also active last year. At 4285 the profile accreted by 11 cubic yards per foot, while at 4290 the profile lost the same amount of sand. At station 4295 the upper beach seaward of the dune eroded back by almost 150 feet. Corresponding volume gains on the lower portion of the profile kept the net volume loss to only 27 cubic yards.

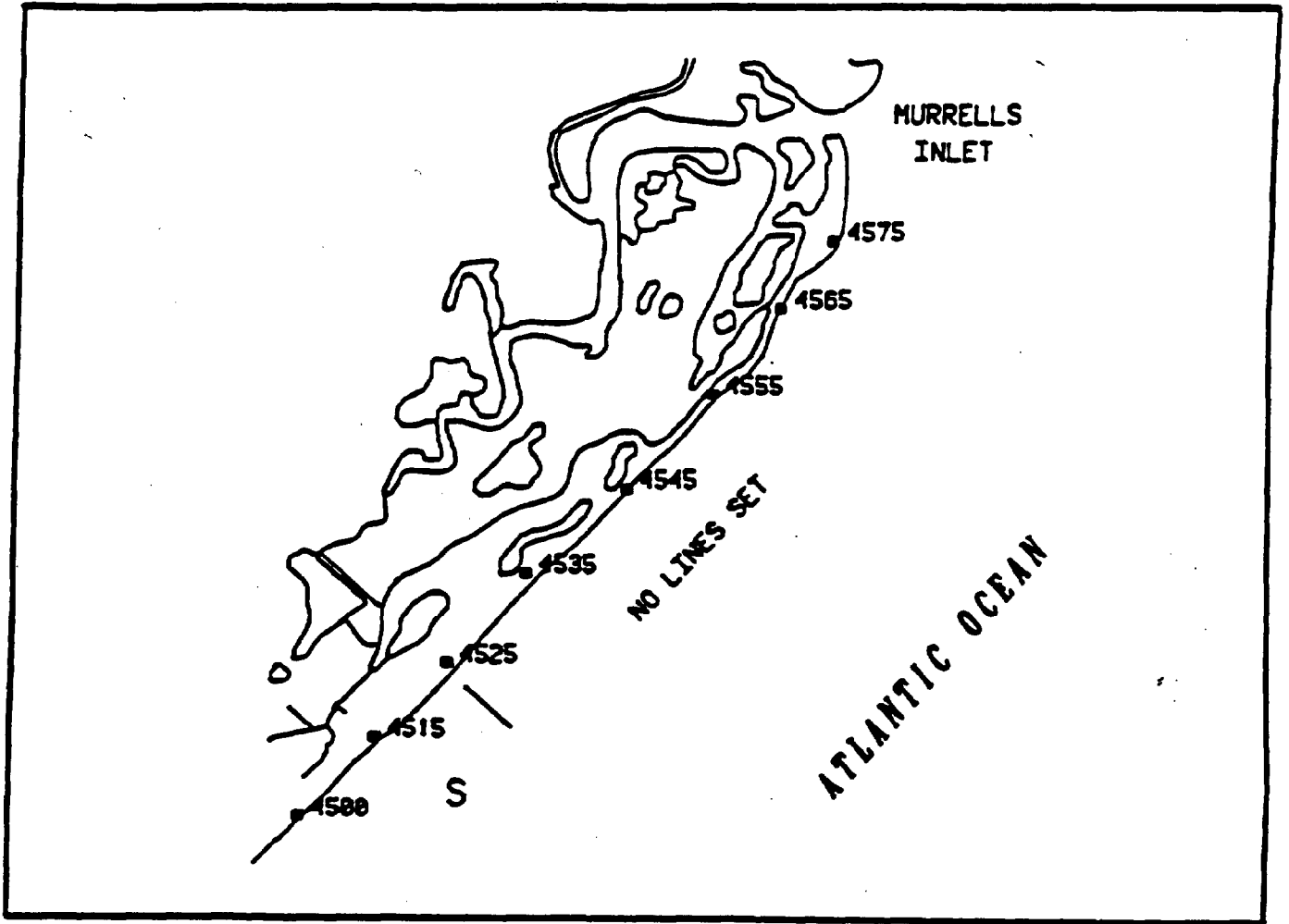
4230B Pawleys Island  
0.6 MI SOUTH OF SOUTH CAUSEWAY NORTH OF HOUSE 550







Litchfield Beach



Huntington Beach State Park

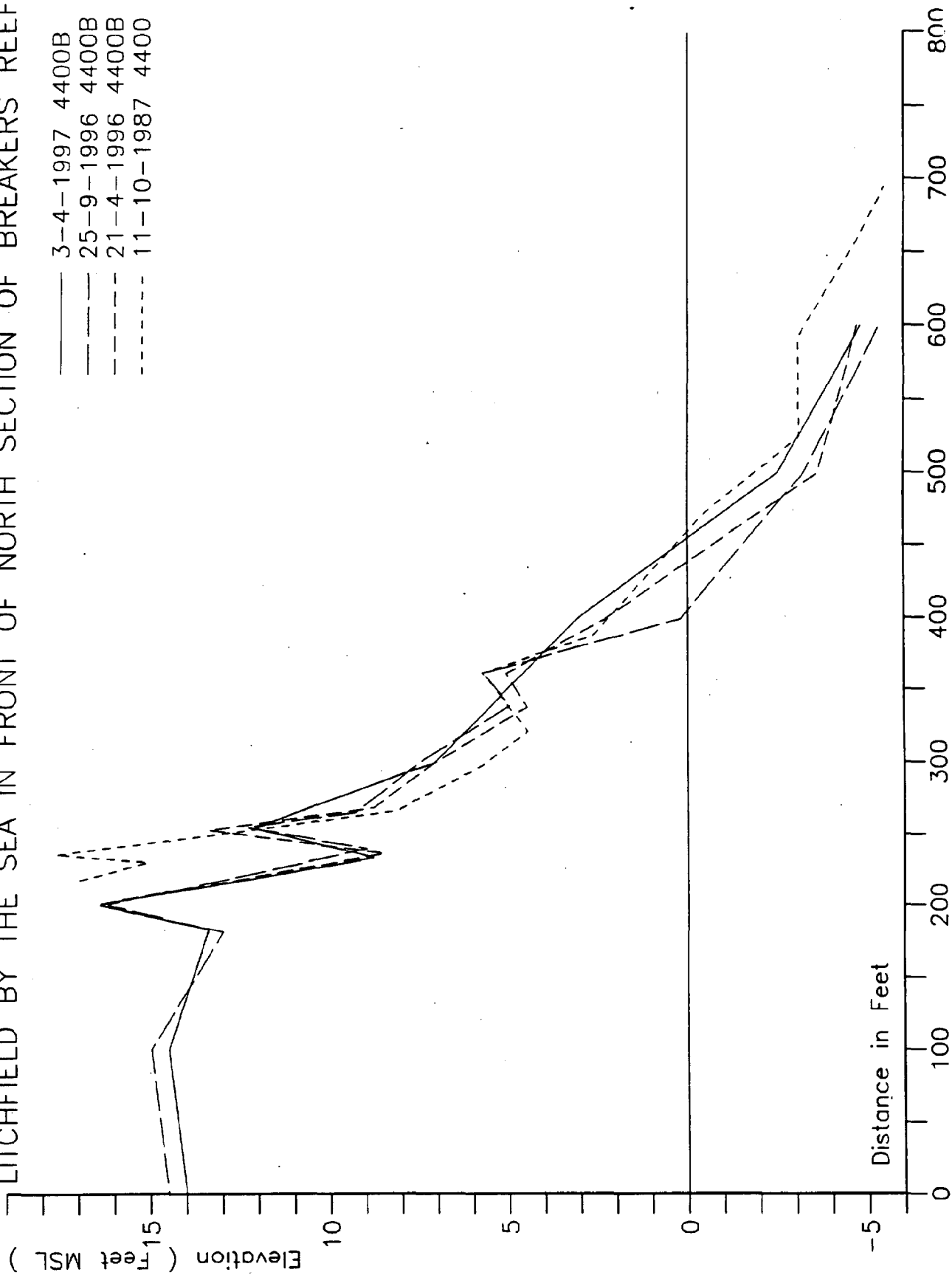
### ***Litchfield Beach/Huntington Beach State Park***

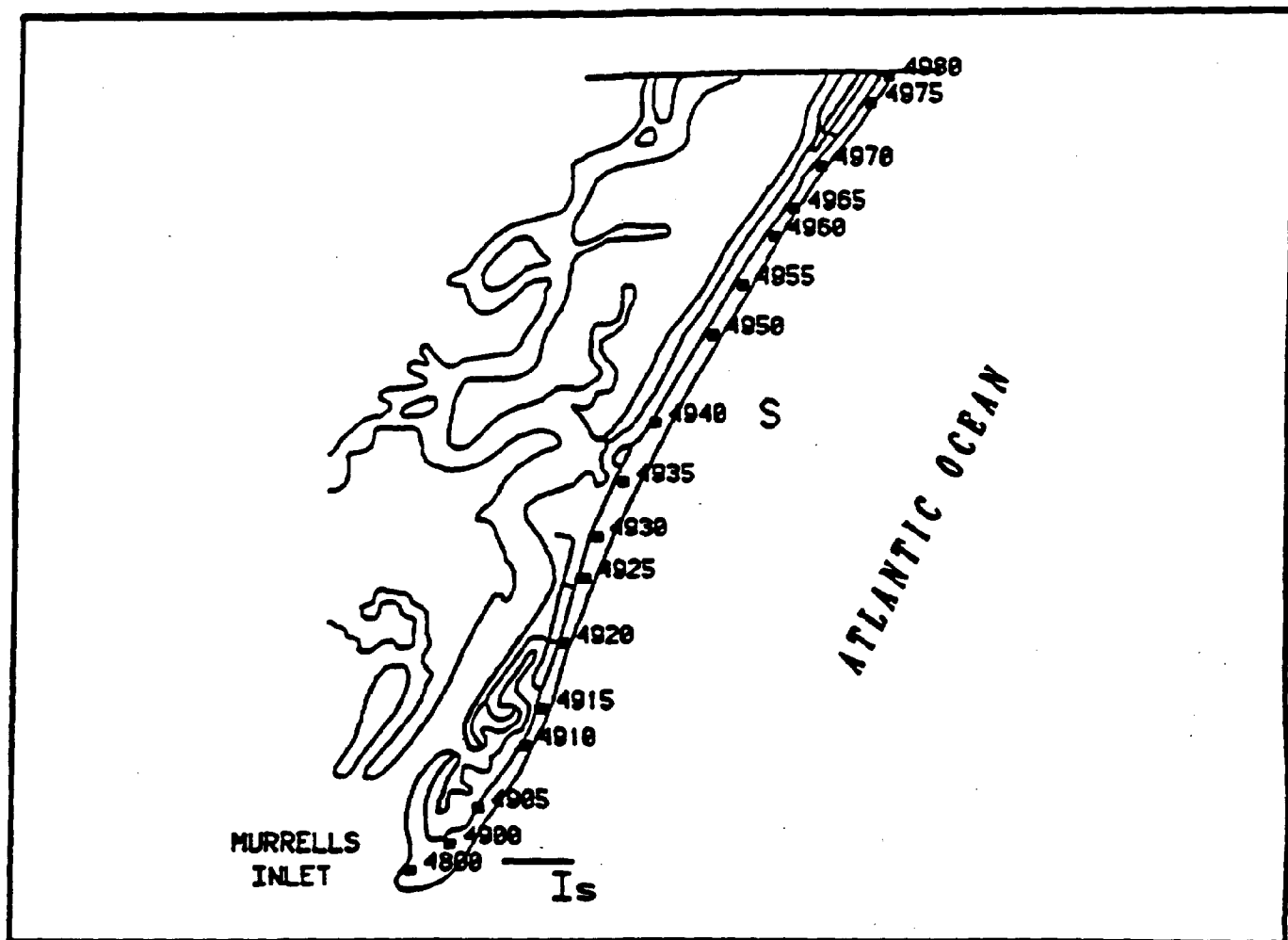
Litchfield Beach, North Litchfield, and Huntington Beach State Park represent a continuous, uninterrupted sediment budget compartment. This area is bounded by Midway Inlet to the south, and Murrells Inlet to the north. The southern spit at Litchfield is a low-lying area with a small dune field, while the central portion of this reach contains a large, well-defined primary dune, one of the largest in the state. The northern reach, in the state park, is directly influenced by Murrells Inlet and the south inlet jetty. Beach surveys were taken at 18 stations in February and April 1997, but not in the fall of 1997.

The long-term shoreline trend is slightly erosional at the southern spit at Litchfield, stable for the remainder of the area. At station 4300, closest to Midway Inlet, the profile volume decreased by 5 cubic yards per foot between September 1996 and April 1997. Stations 4315 and 4330 lost 2 and 4 cubic yards, respectively, over the same time period. Farther north the trend was accretional, as 4360 gained 23 cubic yards, 4400 gained 22 cubic yards, 4430 gained 29 cubic yards, 4490 gained 18 cubic yards, and 4495 gained 26 cubic yards. For all of these accretional stations, the sand was gained over the entire profile seaward of the primary dune. The only station north of the spit to experience erosion was 4395, which lost 3 cubic yards of sand.

In Huntington Beach State Park, station 4500 experienced some berm scarping but gained enough sand on the lower beach to show a net gain of 8 cubic yards. Both station 4515, at Atalaya, and station 4525 gained a substantial amount of sand, 17 and 25 cubic yards, respectively. Most of this volume increase came on the intertidal beach and the lower profile. Station 4535 experienced moderate seasonal changes. The largest volume increase occurred at station 4545, which gained 33 cubic yards to offset a volume loss of similar magnitude during 1996. Stations 4555 and 4565 both experienced some seaward dune face erosion, although 4555 lost 8 cubic yards net while 4565 gained 7 cubic yards net. Station 4575, closest to the inlet jetty, appears to have lost a small dune on the seaward spit between October 1996 and April 1997.

# 4400B Litchfield Beach LITCHFIELD BY THE SEA IN FRONT OF NORTH SECTION OF BREAKERS REEF





Garden City (Georgetown County)

## ***Garden City Beach***

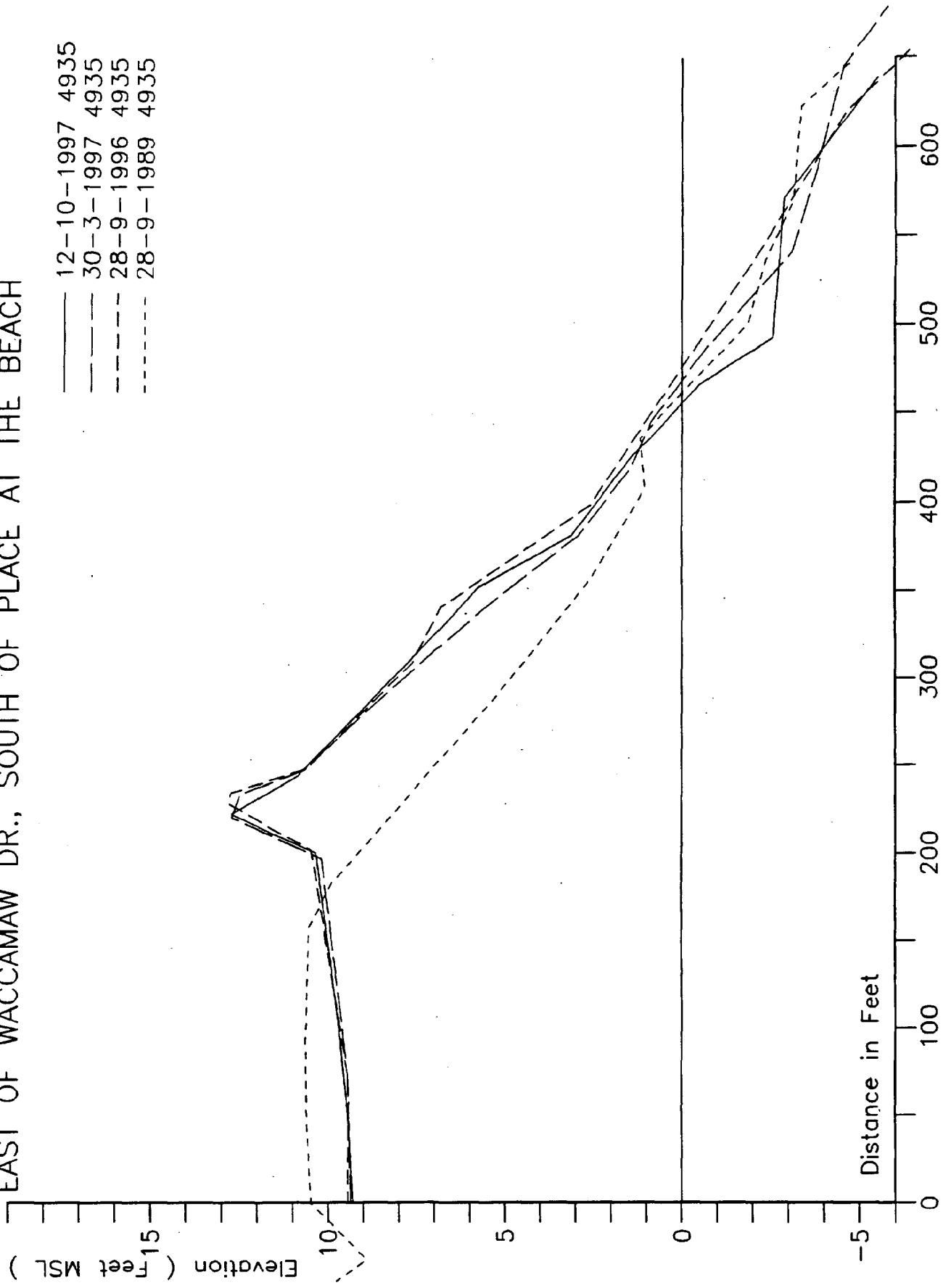
This section of shoreline begins at Murrells Inlet and extends northward to the southern limit of the Town of Surfside Beach. The southern half of Garden City contains few shore-protection structures, while in the northern half, between stations 4960 and 5030, seawalls and bulkheads become predominant. This section also contains a groin field. There are 24 monitoring stations in Garden City, which were surveyed in June and November 1997. In general, sand volumes are adequate in the unarmored section of Georgetown County, begin to decrease in the armored section of Georgetown County, and reach a minimum in the armored section of Horry County.

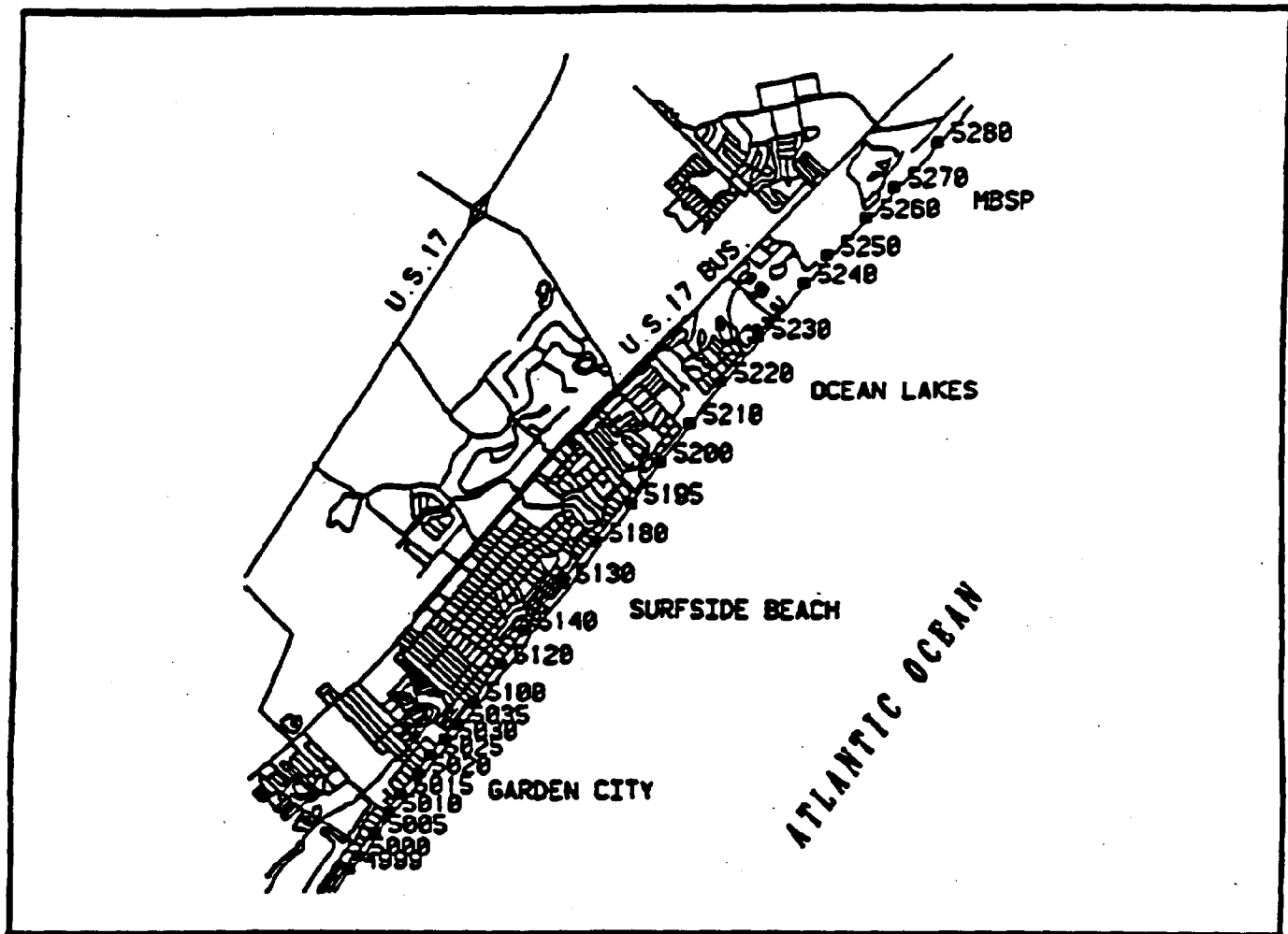
Most stations in the unarmored standard zone from 4900 through 4955 experienced minor to moderate variations to the beach profile during the past year. Several stations at the southern end of this reach experienced erosion between October 1996 and June 1997, with the greatest loss at station 4915, which lost 9 cubic yards. Six cubic yards of this was regained by October, making this the only station with a net loss. All other stations typically showed a net gain of 3-6 cubic yards for the year.

Monitoring stations along the armored shoreline in Georgetown County, from 4960 to 4999, also experienced very minor changes to the beach profile during 1997. Typically sand volumes changed by only a few cubic yards per foot for the year.

For the northernmost section of Garden City, the armored shoreline in Horry County, profiles were fairly stable but slightly more erosional. Station 5000 at Azalea Drive lost several feet from the crest of a narrow dune, resulting in a sand volume loss of 2 cubic yards. Station 5005 at Yaupon Drive also lost 2 cubic yards, while 5010 at Cypress Ave. gained 3 yards. The largest losses were found at 5015, near Holliday Drive, and 5020, at Seabreeze Drive, which lost 5 and 7 cubic yards respectively. The remaining three stations, 5025, 5030, and 5035, experienced net changes of plus or minus one cubic yard.

4935 Garden City  
EAST OF WACCAMAW DR., SOUTH OF PLACE AT THE BEACH





Garden City (Horry County)  
Surfside Beach  
Unincorporated Horry County--South



### ***Surfside Beach and Unincorporated Horry County—South***

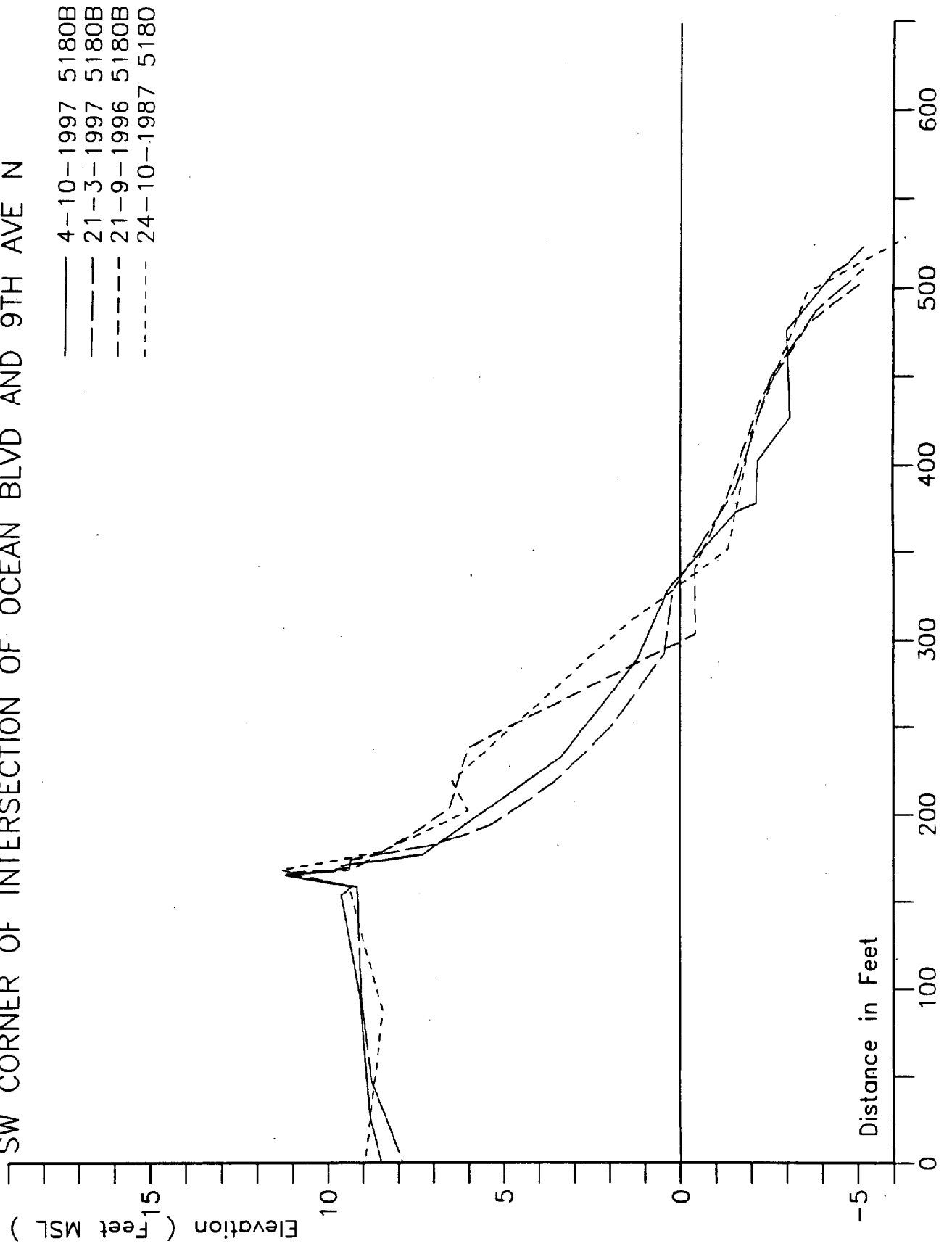
This section of the Grand Strand includes 6 monitoring stations in the Town of Surfside Beach, and 9 stations in the unincorporated region north of Surfside Beach—the campground region, Long Bay Estates, and Myrtle Beach State Park. Surveys were completed in March and October 1997.

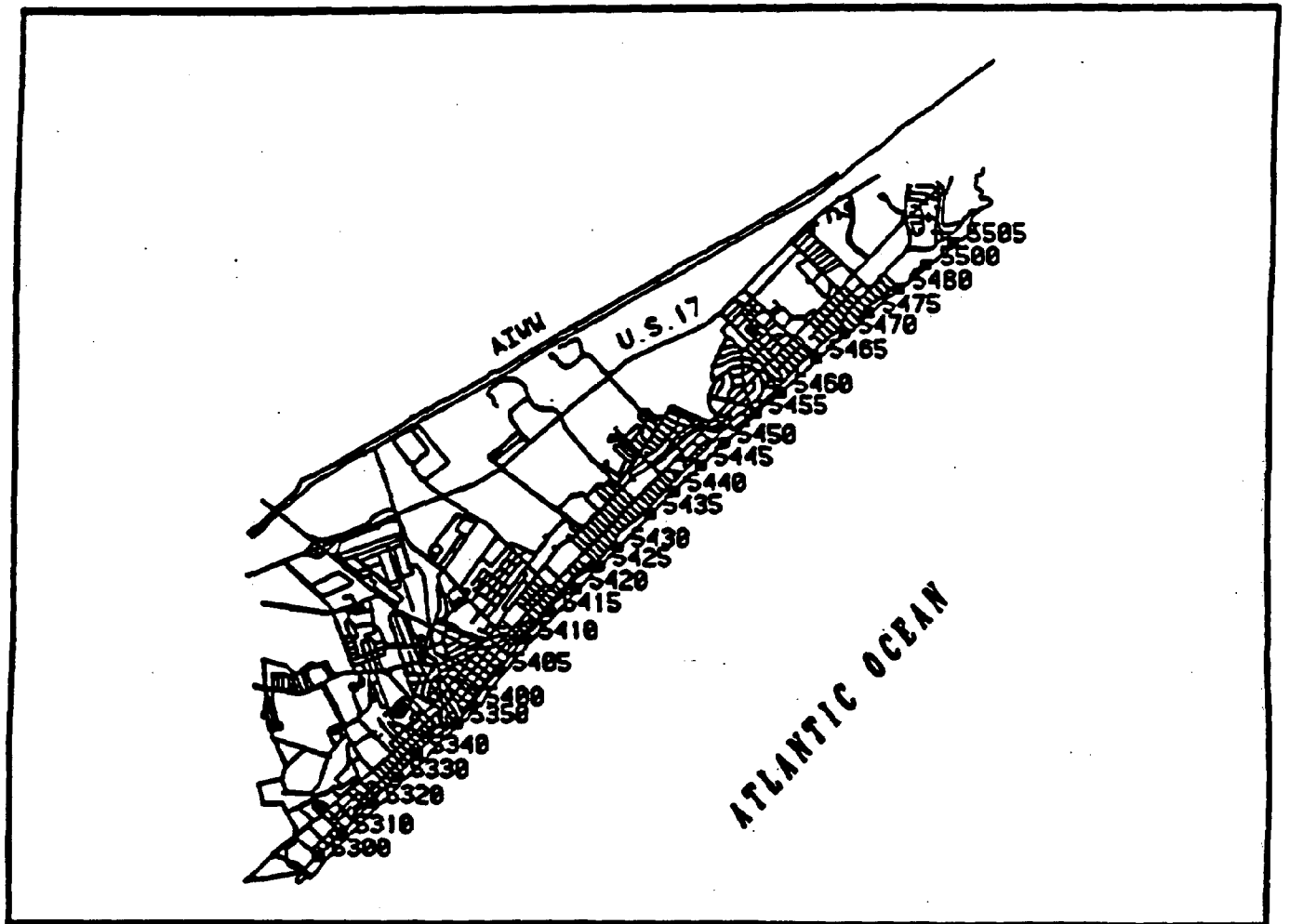
Stations 5100 at 16<sup>th</sup> Ave. South through 5195 at 16<sup>th</sup> Ave. North fall with the Town of Surfside Beach, and with the exception of station 5100, all have a well-established primary sand dune. Stations here experienced minor seasonal changes during the past year. Station 5100 gained 8 cubic yards of sand on the upper beach, while station 5120 at 10<sup>th</sup> Ave. South lost a small berm but had no net volume change. Other typical stations for this area are 5130 near 5<sup>th</sup> Ave. South, which gained 3 cubic yards of sand, and station 5195 at 16<sup>th</sup> Ave. North, which lost 7 cubic yards of sand.

Stations 5200-5230 are located in the campground section. All stations except for 5220, which is armored, have a well-defined primary dune with crest elevation of 12-14 feet. In Ocean Lakes, station 5200 experienced dune erosion and lost 8 cubic yards of sand on the upper beach beach, while 5210 saw minor erosion at the base of the dune with no net volume change. Station 5220, the armored station in Lakewood campground, showed minor profile changes seaward of the revetment. At 5230, in Pirateland, the unit-width volume decreased by 2 cubic yards per foot.

At station 5240 in Long Bay Estates the profile was very stable and showed no net volume change. In Myrtle Beach State Park, 5250 lost 1 cubic yard of sand. The next station to the north, 5260, was also very stable. Near the swimming pool, station 5270 gained 3 cubic yards of sand on the lower beach. At 5280, located at Springmaid fishing pier, the profile also gained 3 cubic yards of sand.

5180B Surfside Beach  
 SW CORNER OF INTERSECTION OF OCEAN BLVD AND 9TH AVE N





Myrtle Beach

## ***Myrtle Beach***

The next area discussed is the eight-mile section of shoreline within the Myrtle Beach city limits. Beach surveys were conducted at 23 monuments in March and September/October 1997. Myrtle Beach was renourished between May and December 1997 as part of the U.S. Army Corps of Engineers Grand Strand Renourishment project. The October 1997 beach profiles show renourishment sand at the southern end of the Myrtle Beach, while the central and northern profiles do not.

Stations 5300-5430, from 29<sup>th</sup> Ave. South to 31<sup>st</sup> Ave. North, are located in the southern commercial district. There are many seawalls and bulkheads in this region, and prior to renourishment sand volumes were relatively low. The section from 5300 at 29<sup>th</sup> Ave. South to 5405 at 7<sup>th</sup> Ave. North was renourished between the March and September 1997 surveys. Prior to renourishment, almost all profiles in this section showed moderate erosion between the fall of 1996 and the spring of 1997. For the renourished stations, the dry-sand beach width increased by 100 to 120 feet between the spring and fall of 1997, as the unit-width sand volume increased by 35-45 cubic yards per foot. The average design unit-width sand volume increase for the Myrtle Beach renourishment project was 38 cubic yards per foot.

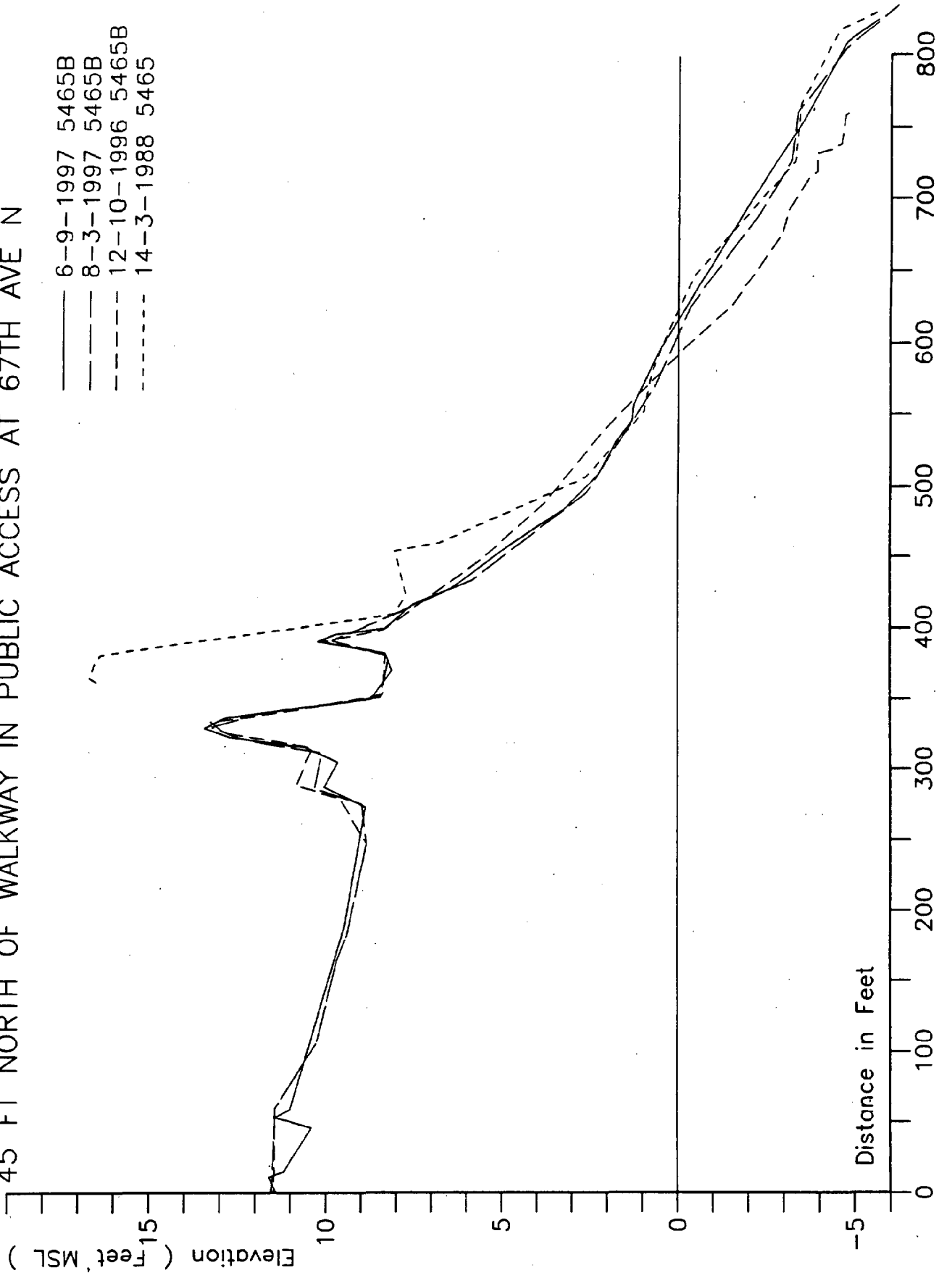
Several other stations from 5410 at 13<sup>th</sup> Ave. South to 5430 at 31<sup>st</sup> Ave. North, located in the southern commercial district but not renourished prior to the fall 1997 survey, were still fairly active for the year. Station 5415 at 20<sup>th</sup> Ave. North lost 16 cubic yards of sand during the winter season but gained it all back by the October survey. Conversely, station 5425 at 27<sup>th</sup> Ave. North gained 33 cubic yards of sand over the winter season but lost it all by the October survey.

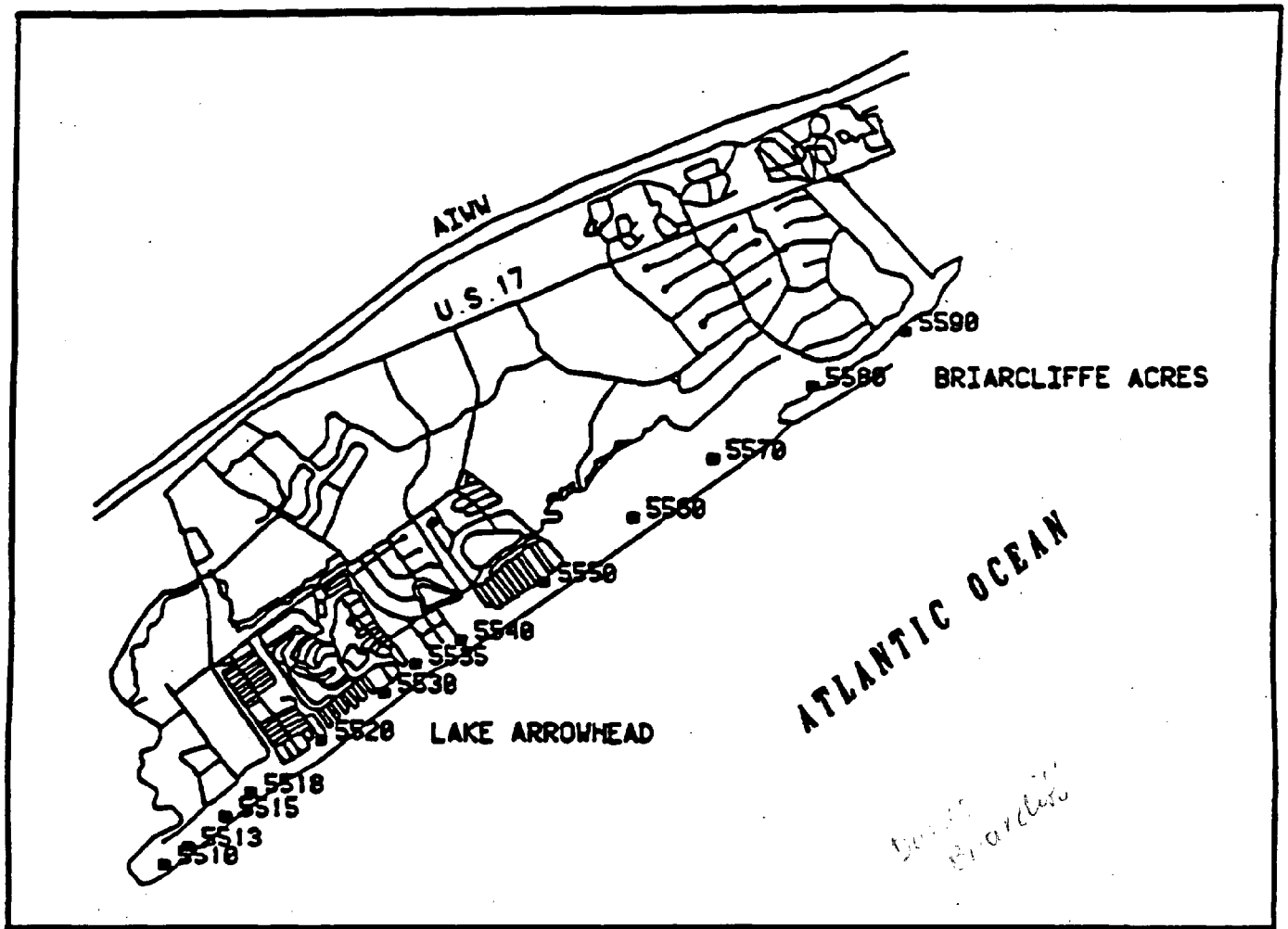
The area between stations 5435 and 5465, from 31<sup>st</sup> Ave. North to 67<sup>th</sup> Ave. North, is primarily a residential section with some commercial sites. There are few bulkheads or seawalls, and although a primary dune exists in many areas there are also unarmored sections where the highland, usually a residential lawn, simply slopes down to the berm. Only three stations in this region show more than minor seasonal changes. Station 5445 at 48<sup>th</sup> Ave. North may have been renourished prior to the September 1997

survey as it gained 49 cubic yards of sand for the year. The next station to the north, 5450, lost 15 cubic yards of sand from the upper beach, while at 5460 the profile gained 39 cubic yards of sand. As with station 5445, this may be renourishment sand.

Stations 5470, 5475, and 5480 are located in the northern commercial district, although there are several residential structures here as well. A small but well-defined primary dune exists along most of the beach. All three stations gained 6-7 cubic yards of sand for the year. This volumetric increase occurred on the lower portion of the profile, below the 0 foot contour, which was in an oversteepened condition in the September 1996 survey.

5465B Myrtle Beach  
45 FT NORTH OF WALKWAY IN PUBLIC ACCESS AT 67TH AVE N





Unincorporated Horry County--North

## **Unincorporated Horry County—North**

*Dunes  
Beach*

This area of unincorporated Horry County is located between the City of Myrtle Beach and White Point Swash, and includes the Shore Drive section, the campground section, and Briarcliffe Acres. There are 14 beach survey monuments located here, which were surveyed on various dates in the spring of 1997 and in December 1997.

Stations 5500 and 5505 are located on Club Road, just north of the City of Myrtle Beach. These two stations were the most dynamic in this area for 1997. Station 5500 lost 32 cubic yards of sand along the entire profile seaward of the dune by April, but then gained back all but one yard by December. Station 5505 gained 30 cubic yards of sand through June, and then an additional 7 yards by December.

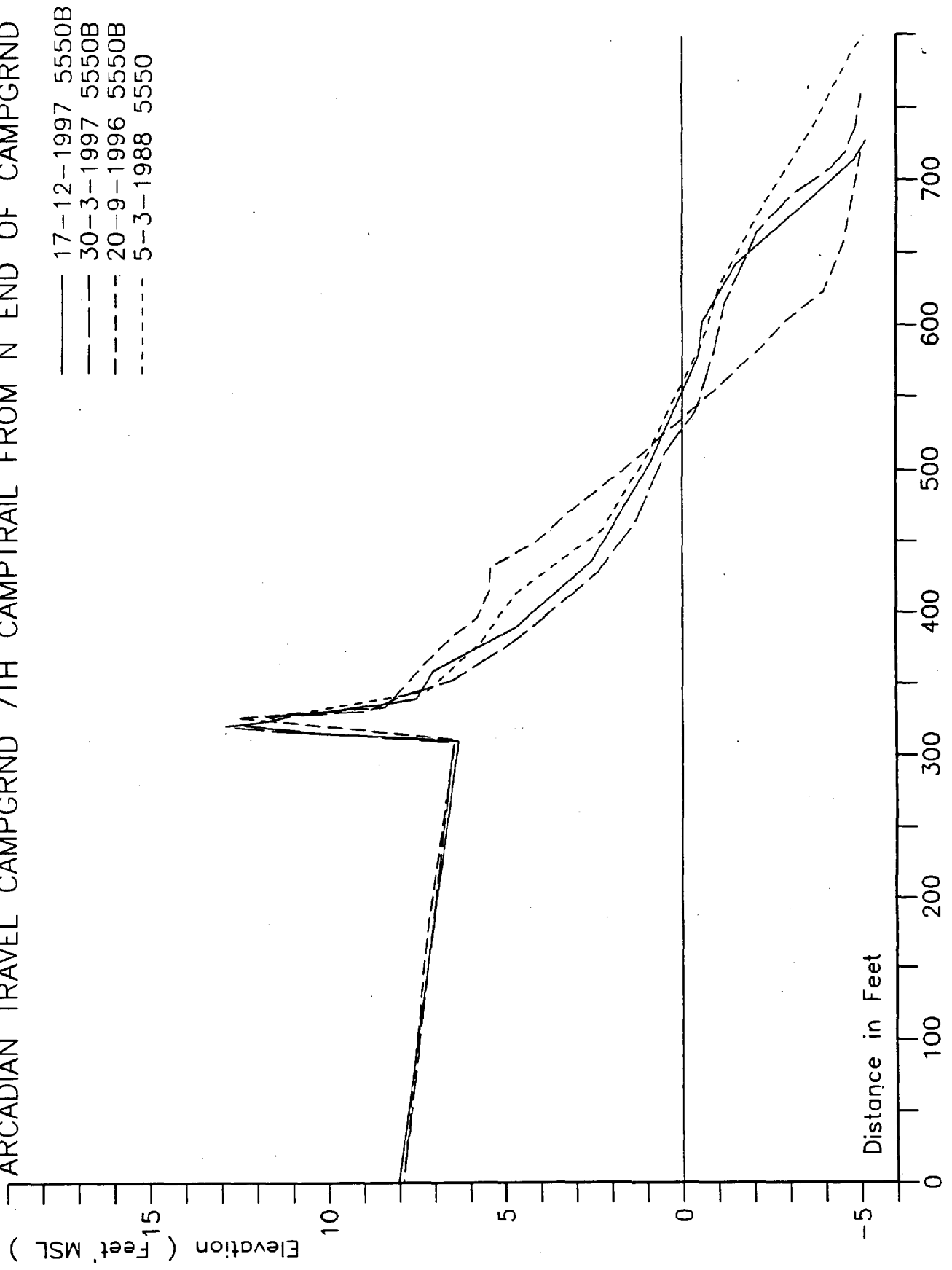
Stations 5510, 5513, and 5515 are located north of Singleton Swash along Shore Drive, where shoreline armoring is extensive. The first two stations, at Sands Beach Club and Brigadune, were fairly stable for the year, but 5515 at Sands Ocean Club lost 20 cubic yards of sand from the lower beach over the latter half of the year.

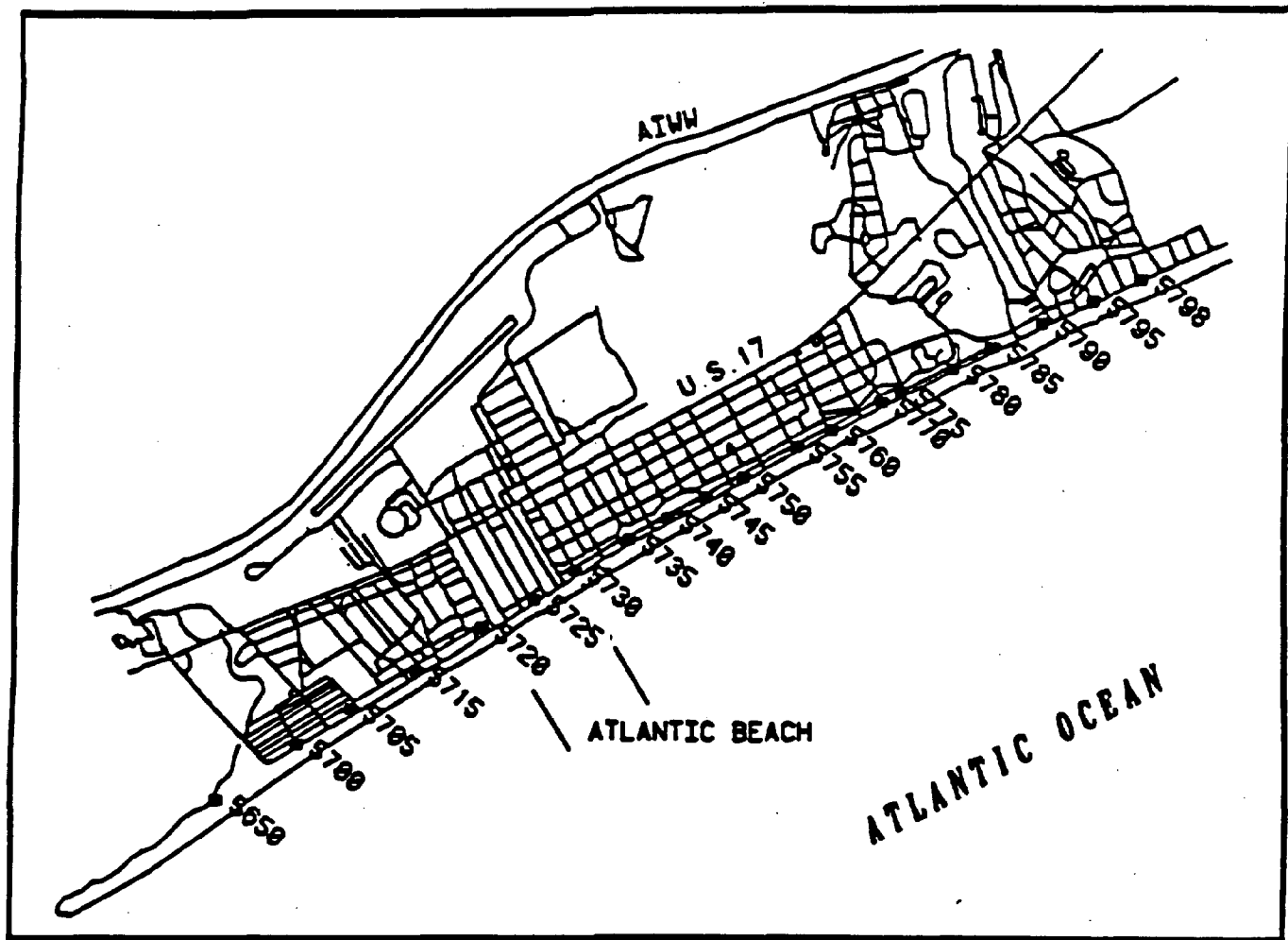
Stations 5520-5550 are located in the campground section, where oceanfront development is a mixture of campsites and resort hotels. All profiles here showed a net gain of sand in 1997. Station 5520 at Apache Campground gained 10 cubic yards, station 5530 at the Radisson gained 13 cubic yards, station 5535 at the Hilton gained 16 cubic yards, station 5540 at the Arcadian gained 10 cubic yards, and 5550 at the Arcadian Campground gained 4 cubic yards.

Stations 5560-5590 are located in Briarcliffe Acres, where the oceanfront is undeveloped and a well-defined primary dune exists with virtually no shoreline armoring. This area was also accretional during the past year, as stations 5560, 5570, 5580 and 5590 gained 14, 6, 12, and 20 cubic yards of sand, respectively.

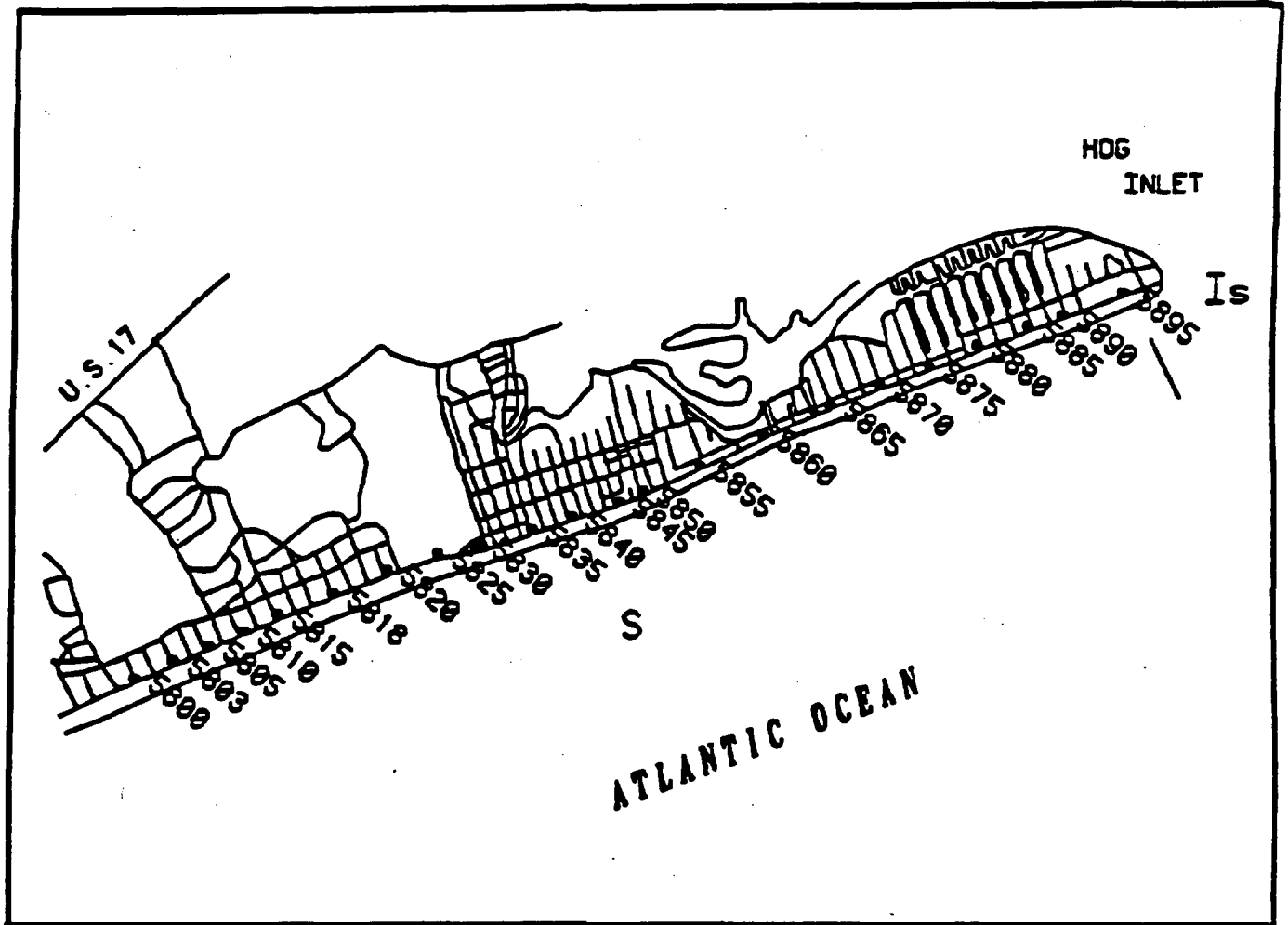


5550B Briarcliffe  
 ARCADIAN TRAVEL CAMPGRND 7TH CAMPTAIL FROM N END OF CAMPGRND





North Myrtle Beach--Southern Half



North Myrtle Beach--Northern Half

## ***North Myrtle Beach***

This section of beach includes the City of North Myrtle Beach and Atlantic Beach, from White Point Swash to Hog Inlet. The shoreline is heavily developed and much of it is armored, with alternating zones of commercial and residential structures. There are 43 beach survey monuments here, which were surveyed in June and November 1997. The beach at North Myrtle Beach is typically very wide and flat, primarily due to the sand size, which is finer-grained than other Grand Strand beaches. North Myrtle Beach was renourished by the Army Corps of Engineers between September 1996 and April 1997, increasing the dry-sand beach width by over 100 feet and unit-width sand volumes by over 70 cubic yards per foot.

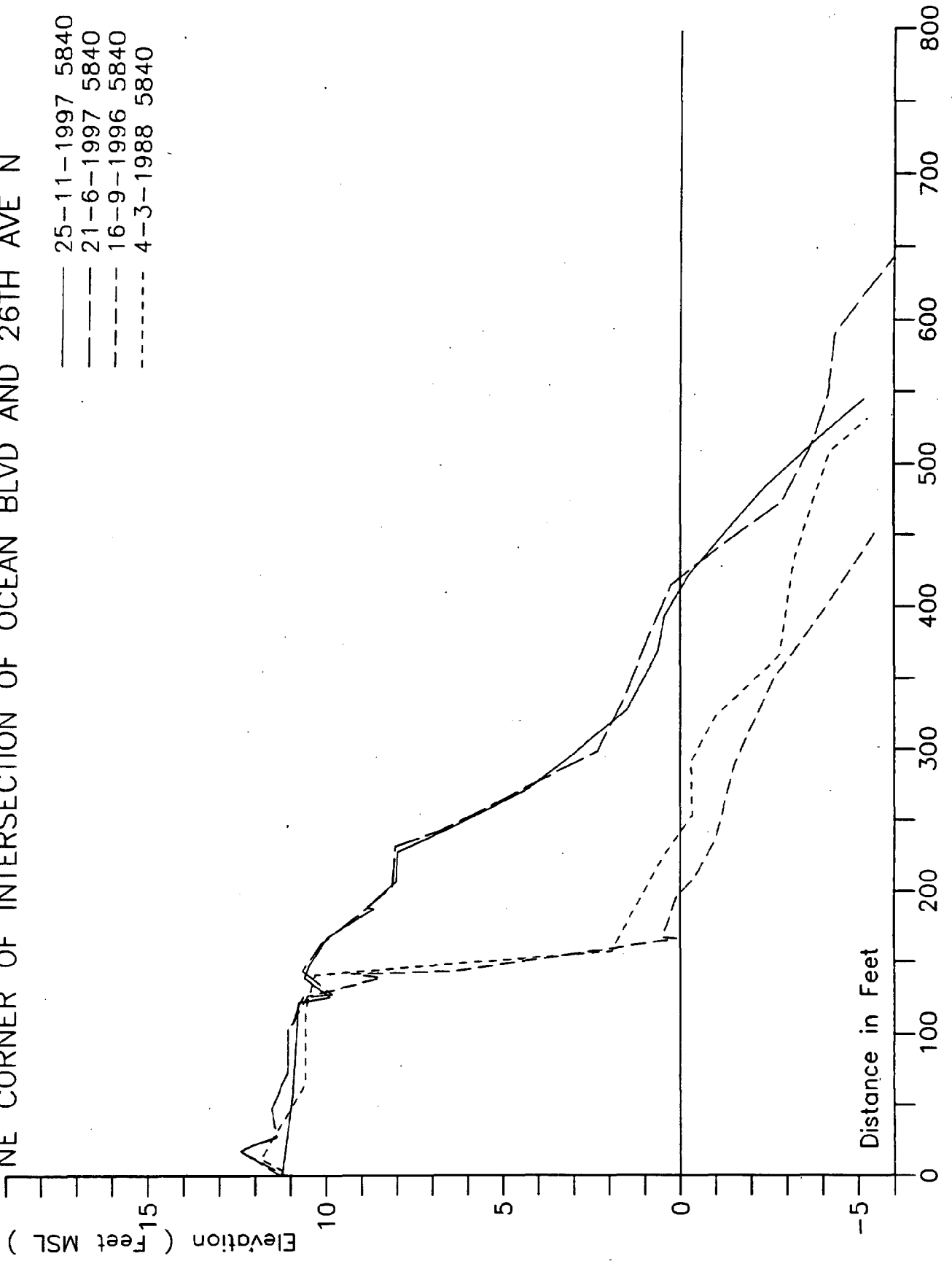
In Windy Hill, the southernmost portion of North Myrtle Beach from 48<sup>th</sup> Ave. South to 37<sup>th</sup> Ave. South, stations 5650-5715 were all renourished between the September 1996 and April 1997 survey, increasing the beach width by over 100 feet. Between the April and November 1997 surveys the beach at station 5650 near White Point Swash experienced moderate erosion while the other three stations were very stable, indicating that any accelerated post-renourishment erosion that may have occurred was limited to the first six months following construction. In Atlantic Beach, from 37<sup>th</sup> Ave. South to 28<sup>th</sup> Ave. South, station 5725 showed the same trend of virtually no post-renourishment erosion between the April and November 1997 surveys.

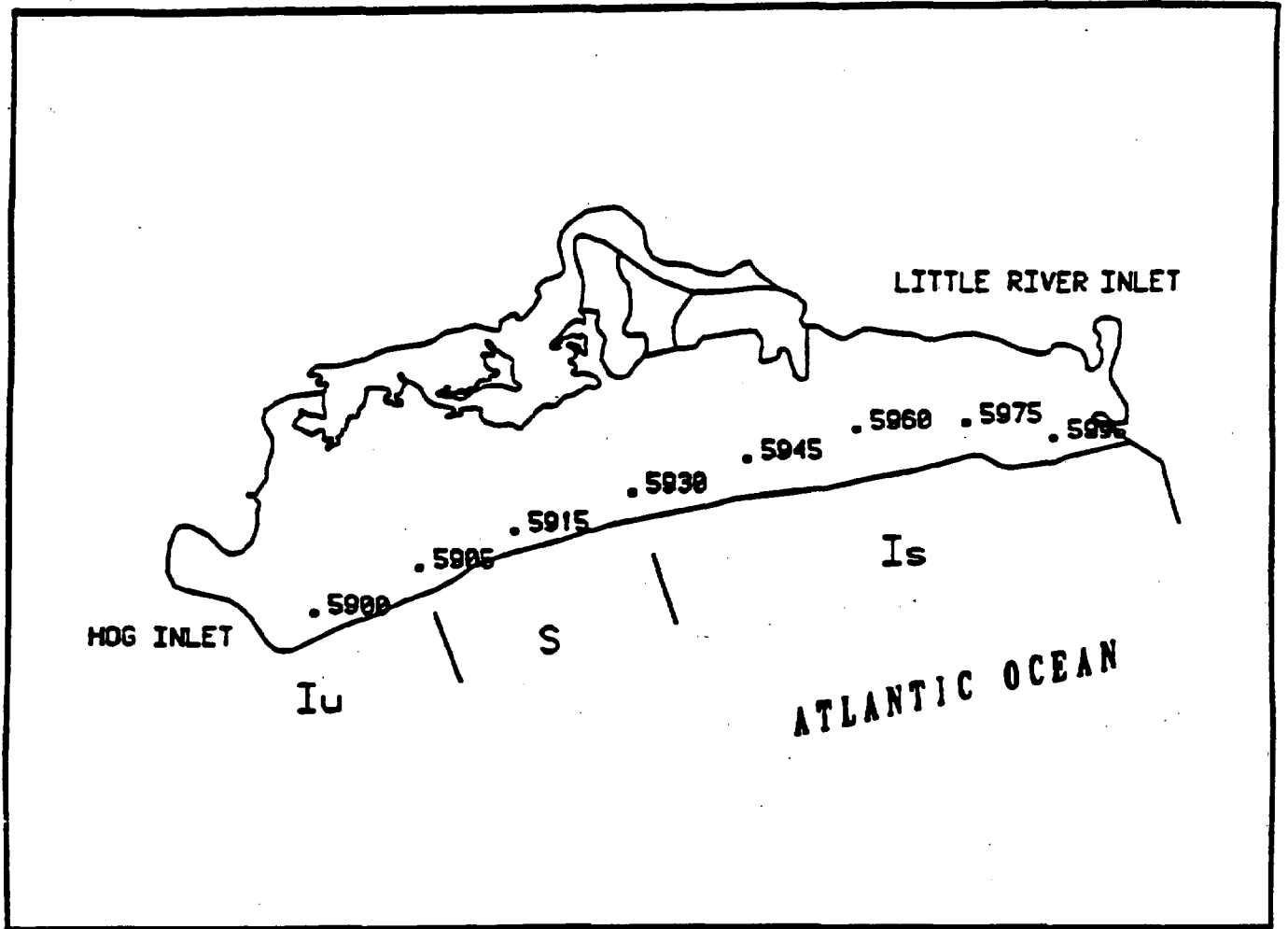
Crescent Beach extends from 28<sup>th</sup> Ave. South to 2<sup>nd</sup> Ave. North. At station 57630 in this section the fall 1996 profile, taken in October 1996, is an immediate post-construction profile. Between October 1996 and July 1997 the upper beach here scarped back 50 feet and lost 9 cubic yards of sand, but was stable between July and November. At all other stations in Crescent Beach the fall 1996 profile is a pre-construction profile, and any post-construction erosion was finished by April 1997, which is essentially the same profile as the November 1997 profile.

In Ocean Drive, from 2<sup>nd</sup> Ave. North to Sea Mountain Highway, most profiles between the spring and November of 1997 show some reworking of the renourishment sand in the intertidal zone but no substantive erosion. Cherry Grove encompasses the northern section of North Myrtle Beach, from Sea Mountain Highway to Hog Inlet.

Much of this area is armored, and portions of Cherry Grove experienced chronic sand deficits prior to renourishment. All but one station here followed the general North Myrtle Beach trend of profile stability between the spring and fall of 1997, with virtually no post-renourishment erosion during this time period. The lone exception is the northernmost station, 5895 at Hog Inlet, where the berm scarped back by 33 feet between June and November.

5840 North Myrtle Beach  
NE CORNER OF INTERSECTION OF OCEAN BLVD AND 26TH AVE N





Waite's Island

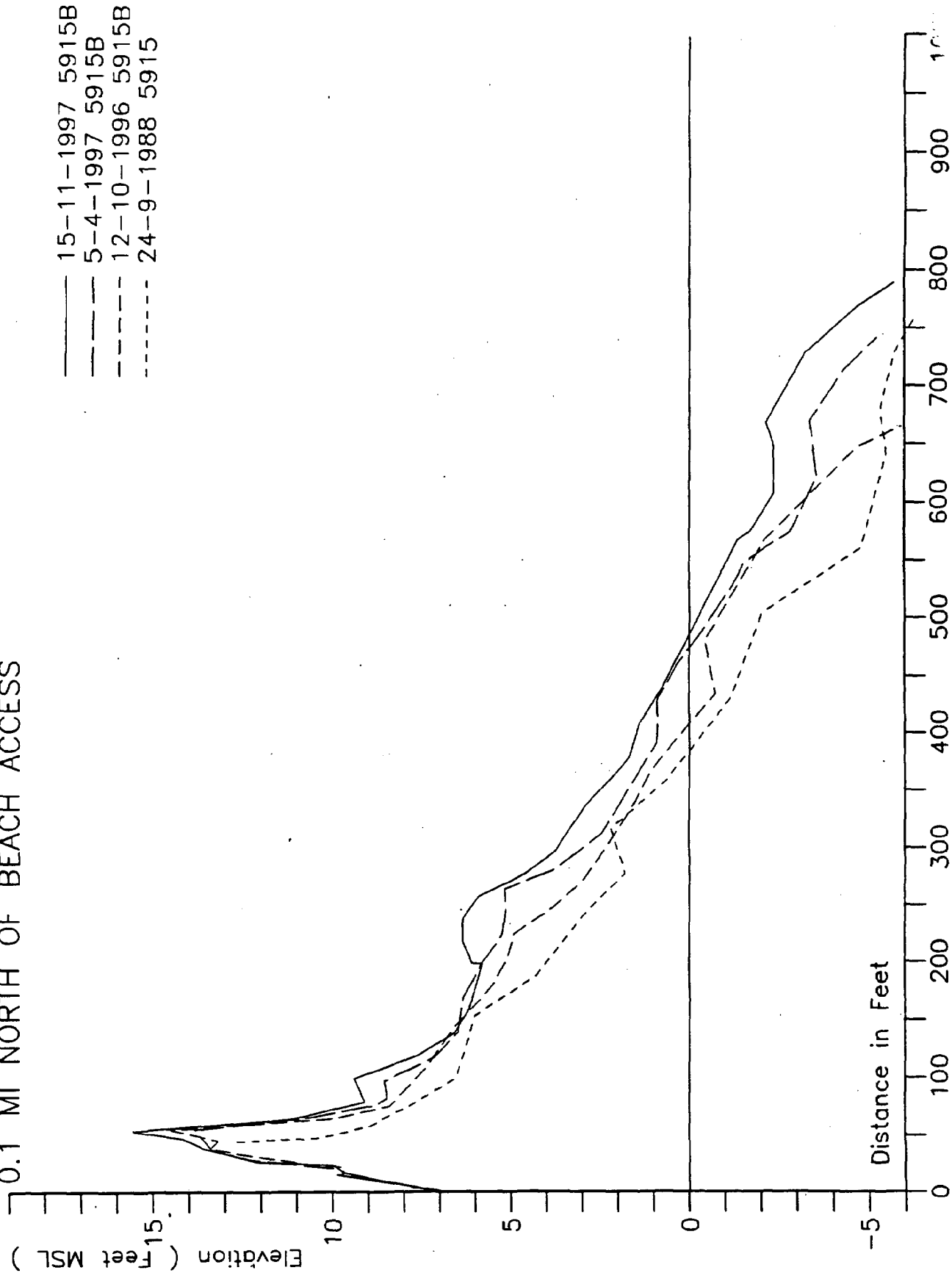
## ***Waites Island***

Waites Island is an undeveloped three-mile long barrier island located between Hog Inlet to the southwest and Little River Inlet to the northeast. Little River Inlet was stabilized by the construction of a jetty system between 1981 and 1983. The southwest end of Waites Island is an unstabilized inlet zone, the central portion is a standard zone, and the northeastern section is a stabilized inlet zone. There are 7 monitoring stations on Waites Island, which were surveyed in April and November 1997.

The Hog Inlet shoreline is extremely erosional, losing several hundred feet in recent years. Monitoring station 5900, located on the inlet, was lost to erosion several years ago. At station 5905, located on the Atlantic shoreline, the two rows of dunes were stable and the intertidal beach experienced minor changes. At station 5915 the primary dune was also stable, while the rest of the beach gained 32 cubic yards of sand for the year along the entire profile. For station 5930, a newly-forming dune seaward of the primary dune continued to grow, increasing in height by several feet, while the rest of the profile also accreted for a total gain of 30 cubic yards of sand. The beach at station 5945 also showed the formation of a new dune seaward of the established primary dune. The total sand gained here was 22 cubic yards. At 5960 the dune was stable while the intertidal profile gained 16 cubic yards of sand from October 1996 through April 1997, and then was unchanged through November. While the dune crest at 5975 increased in height by two feet this was the only station to show a net volumetric loss for the year, losing 6 cubic yards of sand from the upper intertidal beach. The final station is 5995, located closest to Hog Inlet and 50 feet south of the south jetty. In 1996 the primary dune here was reduced in elevation from 13 feet to 12 feet and the seaward face of the dune eroded back 10 feet. In 1997 this trend continued, as the dune dropped in elevation by two feet and the seaward face of the dune scarped back another 16 feet. This is the only station on Waites Island to show dune erosion, but a much larger dune with a crest elevation in excess of 20 feet sits immediately landward of the eroding primary dune. The profile below the 0 foot contour at this station gained sand for the year, showing a volume increase of 18 cubic yards.



5915B Waites Island  
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## **State-Wide Summary and 1998 Update**

1997 was a fairly mild year for the beaches of South Carolina. Although there were seven named storms during the Atlantic hurricane season, no tropical storm or hurricane caused any erosion to the state's beaches. As in previous years the inlet zones, those beaches closest to unstabilized tidal inlets, were the most dynamic. The northeast end of Fripp Island, most of Harbor Island, and the southwest end of Folly Beach are all inlet zones that experienced significant shoreline changes. A shoal attachment episode in the inlet zone at the northeast end of the Isle of Palms finally concluded in 1997, ending two years of extreme erosion there.

Other areas with chronic sand deficits and a minimal buffer between the ocean and high-ground development include Daufuskie Island, parts of Edisto Beach, the northeast end of Sullivans Island, and southern Debidue Beach. Major beach renourishment projects were constructed at North Myrtle Beach between September 1996 and April 1997, and at Hilton Head Island between May and November 1997. Another renourishment project began in Myrtle Beach in May 1997. In most other areas of the state the beaches were fairly stable.

In 1998 the Myrtle Beach renourishment project is expected to be finished, while a major renourishment project is scheduled for Surfside Beach and Garden City Beach. Both the Town of Sullivans Island and the Town of Pawleys Island are planning beach restoration projects that include repair work to existing groin fields and moving sand with land-based equipment from accreted shoals to eroded sections of shoreline. A renourishment project is currently underway at Debidue Beach, using sand from an upland source, while a dredged-based renourishment project is also planned for Daufuskie Island this year.

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